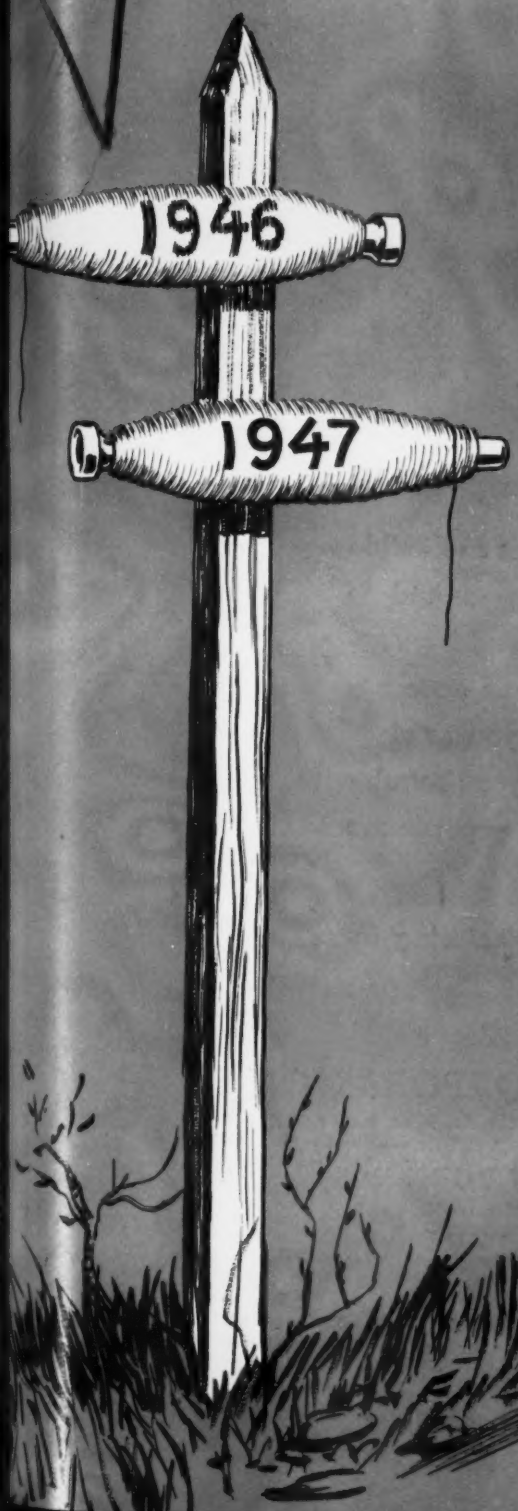
TECHNOLOGY DEPARTMENT

TEXTILE WORLD

A McGraw-Hill Publication ---------- FEBRUARY • 1947



Annual REVIEW *and* FORECAST *Number*

STARTS ON PAGE 101

"You're Right!

Your Business Is Different!"

Each business has its own peculiar problems.

That is why Commercial factoring is so flexible —a modern method of financing—suited to your particular needs. Immediate working capital is made available through your accounts receivable. Cash is forwarded to you as shipments are made. Yet you sell on your regular terms. Credit losses and collection expense are assumed by us.

Let us tell you how Commercial factoring increases turnover and profits.

COMMERCIAL FACTORS CORPORATION

Fred'k Vietor & Achelis, Inc.
Established 1828

Schefer, Schramm & Vogel
Established 1838

Peierls, Buhler & Co., Inc.
Established 1893

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EUGENE G. LYNCH, 80 FEDERAL STREET, BOSTON, MASS.
T. HOLT HAYWOOD, WINSTON-SALEM, NORTH CAROLINA

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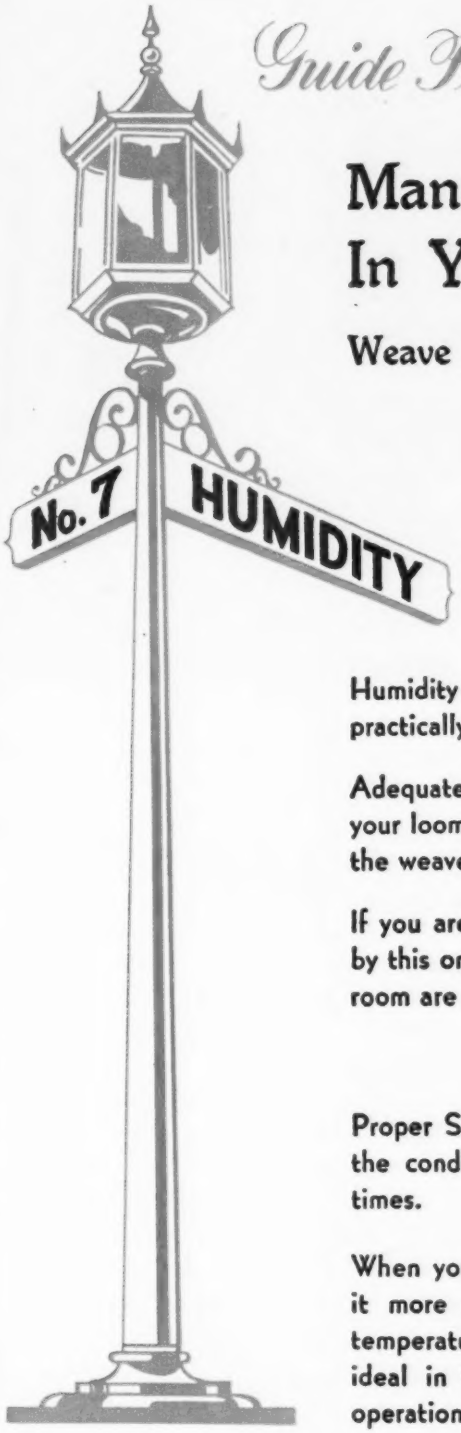


Guide Posts to Increased Production

Man-Made Weather In Your Mill

Weave Room air properly humidified will

Reduce Loom Stops
Diminish Dust and Fly
Eliminate Static Electricity

In a dry weave room both warp and filling become brittle . . . loom stops are excessive . . . production falls off.

Humidity reduces this trouble. The correct amount of humidity practically eliminates loom stops from this source.

Adequate control of humidity and temperature enables you to run your looms at consistently higher speeds. It lightens the work of the weaver; steps up weave room efficiency; reduces dust and lint.

If you are having excessive loom stops you may find it is caused by this one factor. Be sure that weather conditions in your weave room are right—

Consult Your Engineers

Proper Supervisory Controls should be set up to make sure that the conditions and the standards you want are maintained at all times.

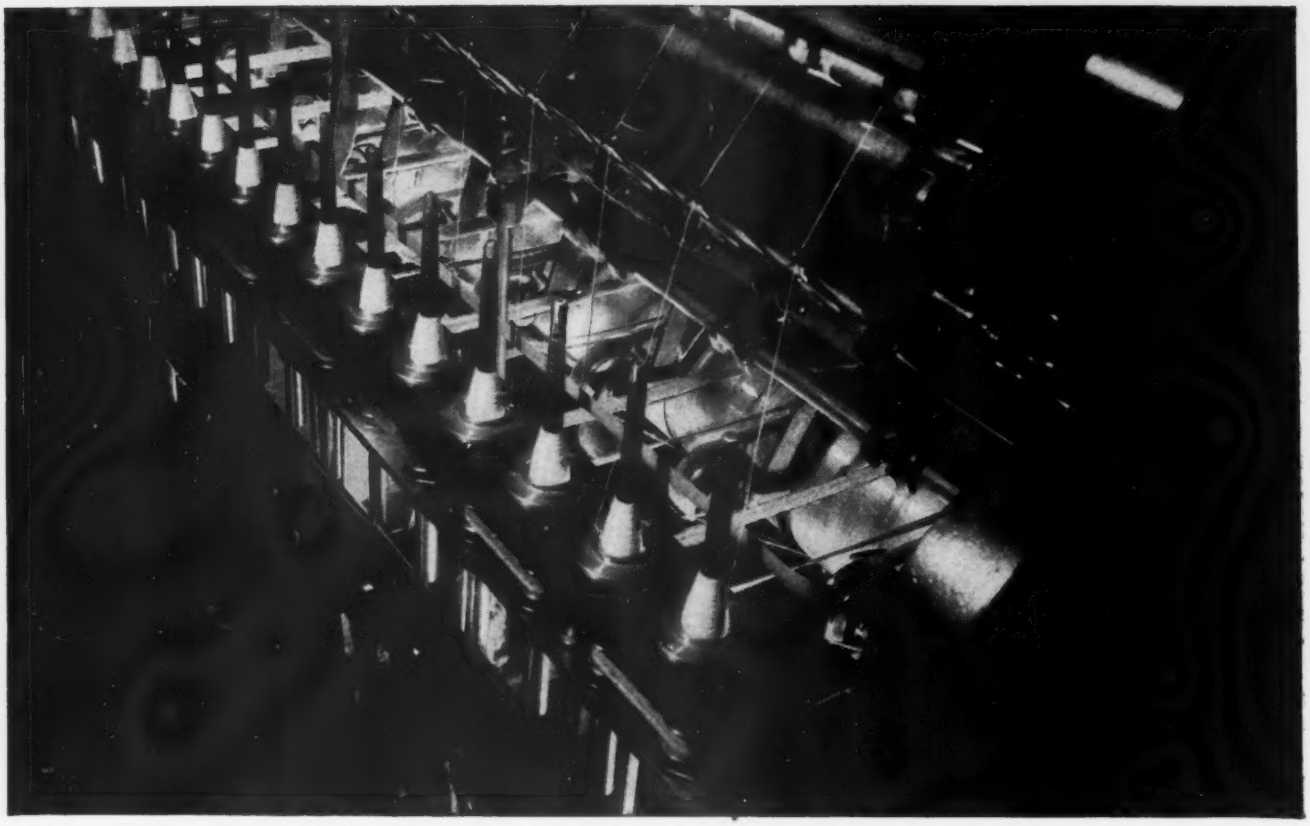
When you install new X Series High Speed Looms you will find it more necessary than ever before to have correct operating temperatures and humidity. Conditions which you have found ideal in the past may prove to be entirely inadequate for the operation of these faster running looms.

Correct atmospheric conditions are and always have been essential to good weaving.

Seventh in a Series

Of What Well-Managed Mills Are Doing to Get the Best Results in Weaving

DRAPER CORPORATION
HOPEDALE MASSACHUSETTS



SMOOTHER, FINER YARN
...WHEN YOU "SPIN WITH SPINDURA"

TEXACO *Spindura Oils* are especially made for spindle lubrication. Their high resistance to oxidation and thickening means less spindle vibration, less hunting and lagging, fewer ends down. Consequently, yarn spun with *Spindura* has more uniform twist, smoother finish, finer quality.

In addition, frames lubricated with *Spindura* can carry heavier, firmer packages and operate efficiently at higher speeds . . . while *Spindura's* resistance to atomization assures cleanliness and reduces oil consumption. This means high production and lower costs of top quality yarns.

Texaco Spindura Oils meet spindle manufacturers' specifications for lubrication of spinning, throwing, spooling and twisting machines. *Spindura Oils* are always uniform in quality, and are used by leading mills everywhere.

Spin with Spindura for better yarn. Get Texaco Products and Lubrication Engineering Service from the nearest of the more than 2300 Texaco distributing plants in the 48 States, or write:

☆ ☆ ☆

The Texas Company, 135 East 42nd Street, New York 17, N. Y.

TEXACO
REG T M

TEXACO Lubricants
FOR THE TEXTILE INDUSTRY

Tune in...TEXACO STAR THEATRE presents the NEW EDDIE BRACKEN SHOW every Sunday night. Metropolitan Opera broadcasts every Saturday afternoon.

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TEXTILE WORLD

FEBRUARY 1947 — VOLUME 97 — NUMBER 1

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THE *Long-Range* VIEW

My, How You've Changed!

This annual review and forecast issue of TEXTILE WORLD has within it some messages the importance of which might easily be overlooked. Let us examine some of these messages.

1. The international roundup which begins on page 106 is one example. It is hard for many of us to see the significance of what is happening abroad, to realize what a vital part our textile technology is playing throughout the world. But look at the report on Australia—American plants are responsible for much of the new textile activity that is going on there, and American textile technology can take credit for even more. Look at the rayon plants being built in India and Latin America—again American influence is felt.

So long as there is a relatively high wage scale in the United States, we shall have great difficulty in exporting textiles; but the increases in mechanization taking place here may alter that picture somewhat. As the labor cost per unit is reduced, mills come closer to meeting foreign competition based on low wages, especially low wages which are usually accompanied by very low production per employee.

2. The great domestic demand for textile machines is partially reflected in the chart of activity on page 105. This demand indicates clearly the desire of mills to modernize. Much of the incentive to modernize has come from the need to circumvent labor shortages and higher labor costs. Fortunately, good profits are enabling mills to order the things they need. There undoubtedly is some abnormal expansion represented by mills' demands for machines; and we should not decry the shutting down of the least efficient units when contraction becomes necessary. Most operators of mills fully realize that they must bring their plants up to date or prepare to shut down.

3. Research activity, although still inadequate especially in regard to wool and cotton, is continuing to increase. Particularly in finishing and in developing synthetics, such activity is resulting in practical applications in mills today.

4. Handling of personnel is another greatly changed aspect in the textile industry. To the lot of labor have come great changes: witness universal vacations with pay, many varieties of insurance, profit sharing, unemployment benefits, and improved working conditions. Textile-mill employees are far better off than many persons in professions, "white-collar" jobs, or merchandising positions. The better type of employee which is being attracted to textile plants is an important factor in recent progress.

So much for the review, now what's ahead. For one thing, we can never go back to the 1930's. Textiles are in a new era in which technological progress is paramount. As surely as our nation leads the world, our textile industry is becoming more international. Production of synthetic fibers has no territorial limitations, such as have wool growing and cotton raising. Today there are virtually no reasons why fibers should process better in one locality than the other.

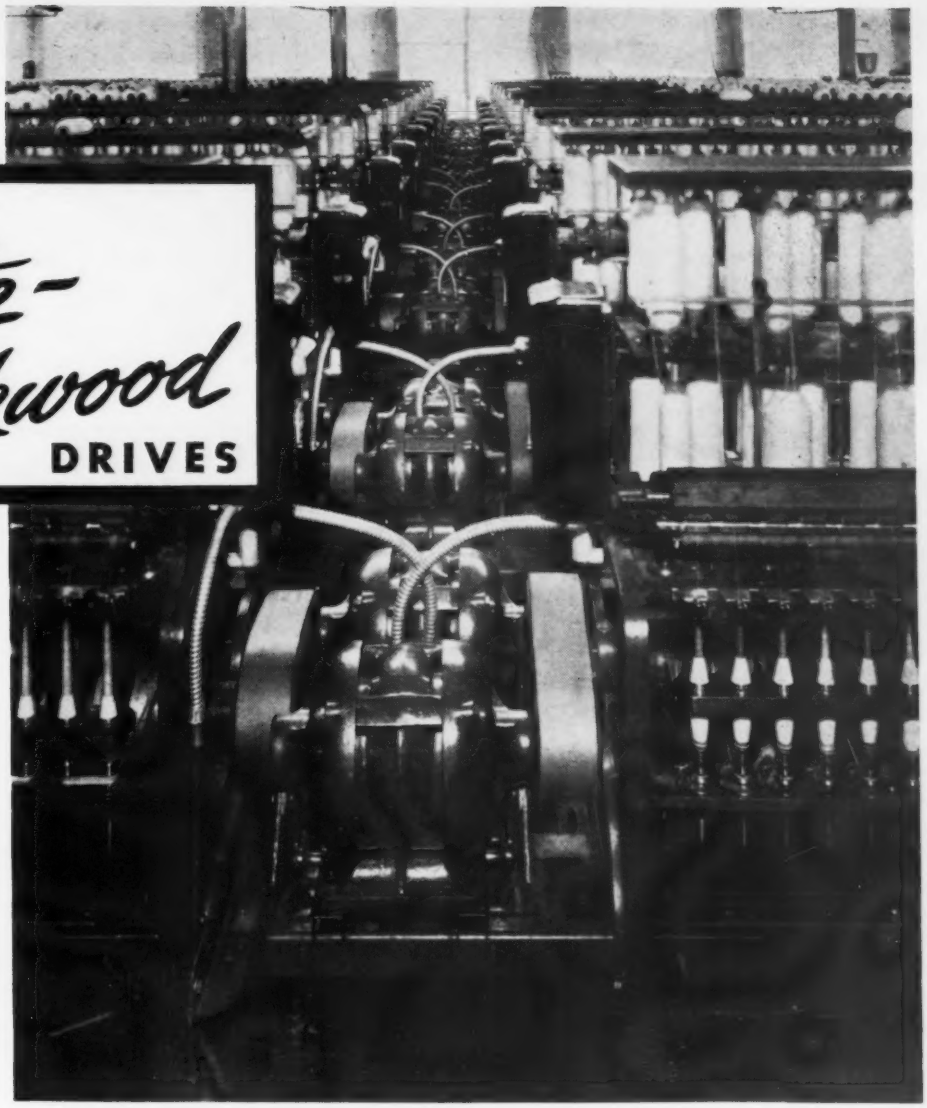
Mills know more now than ever how best to handle fibers to produce fabrics to particular specifications. The textile industry has entered the postwar era as quite a different industry from what it was prewar.

C. H. Bendigo

RHOADS

Tannate-Rockwood

DRIVES



Helping to produce the goods . . . thousands of Tannate-Rockwood drives proved their worth in the recent years of maximum production. Ranging in size from fractional horsepower to large motor drives, these simple, effective units helped produce nearly every kind of textile and a great variety of other manufactured items.

Well-engineered, the Tannate-Rockwood drive is so simple it requires a minimum of maintenance and attention. The motor is so mounted that its weight automatically maintains the correct belt tension to assure the delivery of all the power needed by your machines.

Try this dependable unit for your drives, too. You will find, as have hundreds of others, that Tannate-Rockwood drives will save you money.

ESTABLISHED 1702

J. E. RHOADS & SONS

35 NORTH SIXTH ST., PHILA. 6, PA.

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Flexible Equipment

cotton today . . .
synthetics tomorrow

A few simple changes and you're ready to process practically all types of synthetic fibres now in commercial use.

Versatility in equipment is a must today. Continuous production to meet changes in fashion requirements depends upon a mill's ability to change its production setup rapidly and economically.

With Saco-Lowell's flexible equipment, you can blend, prepare and spin synthetics in any combination today . . . and then, with a few simple mechanical changes, convert to cotton processing.

Our engineers will be glad to work with you on any program which you may have under consideration on this important subject of synthetics.

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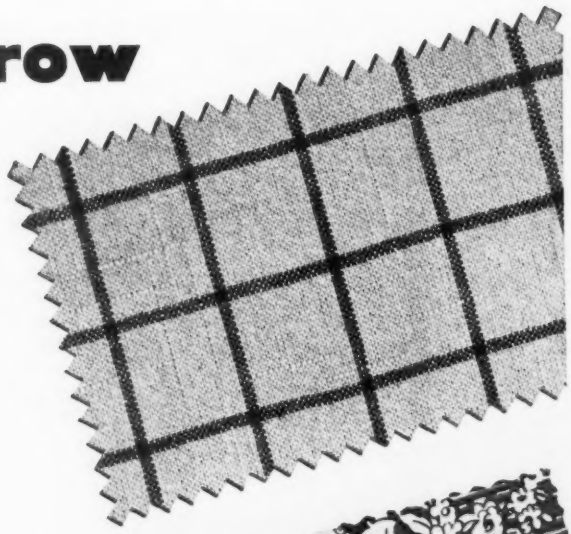

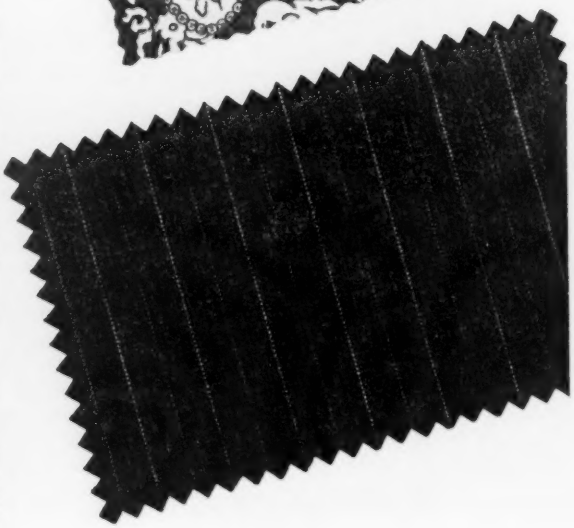

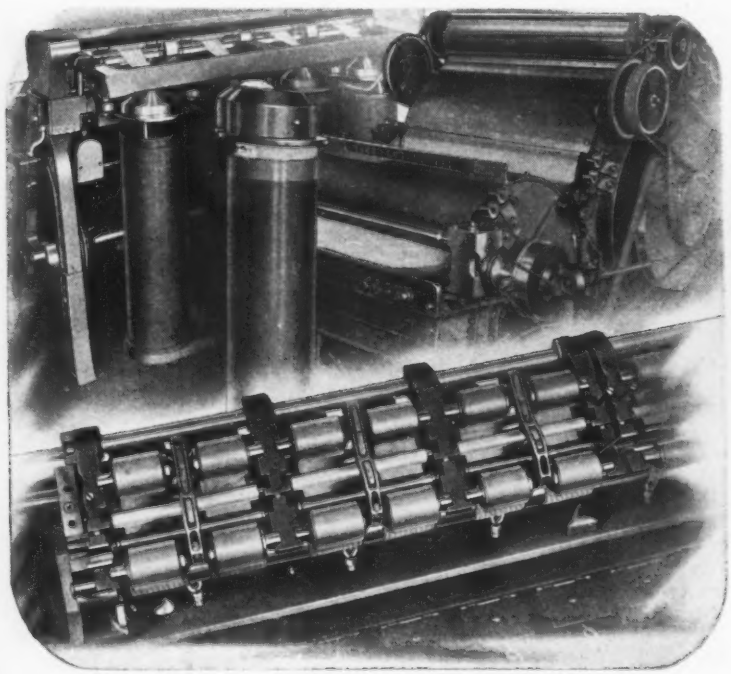

Easy-Mounting, Fast-Locking Sheave

Pays Off

The First Time You Put It On!

"MAGIC-GRIP" *sheaves offer time-saving, money-saving features!*

EVEN if you install the sheave only once, and never change it again — it pays to get a "Magic Grip" sheave! For frequent changes, naturally, your savings pyramid.

- **No filing or reaming.** "Magic-Grip" bushing slides easily, even on oversize shafts.
- **No hammering or forcing** to damage motor bearings.
- **No wheel puller needed** to get the sheave off.
- **No set screws** to mar or score the shaft.
- **No wobble or blacklash.** "Magic-Grip" sheaves lock to shaft with shrunk-on grip.

HOW DOES IT WORK? Sheave and bushing come completely assembled. You just slip it on the shaft — align — and tighten three screws. *That's all!* And it comes off just as easily.

Standardize on time-saving, money-saving "Magic-Grip" sheaves. They're heavy duty, precision made and finely finished — the best sheaves you can buy . . . the best economy in the long run. Get them through your nearest A-C dealer or office.

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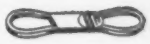
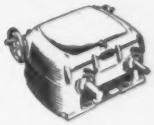
TEXROPE .. Greatest Name in V-Belt Drives



"Super 7" V-BELTS
Five Types — Sizes to suit every power transmission job.

Texsteel, Texdrive, "Magic-Grip"
— sheaves in a full range of sizes, grooves.

"Vari-Pitch" SHEAVES
Exact variations in speed, stationery or motion control.



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Speed variations up to 375% at the turn of a crank.

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Finest V-Belt engineering talent in the world—at your call.

TEXROPE "Super 7" V-Belts result from the cooperative research of two great companies — Allis-Chalmers and B. F. Goodrich. They are sold only by A-C.

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One of the Big 3 in Electric Power Equipment — Biggest of All in Range of Industrial Products

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A CENTURY OF SERVICE to Industry THAT MADE America Great

Seventeen years ago, Lukens Steel Company began the manufacture of its first clad metal —Lukens Nickel-Clad Steel. Other economical Lukens Clad Steels followed—Inconel-Clad Steel and Monel-Clad Steel.

Now, Lukens offers a complete line of Stainless-Clad Steels, produced by the same method as its earlier clad steels.

In the Lukens' method, a light layer of the proper type of solid stainless steel is bonded, by hot rolling, to a plate of carbon or alloy steel. This method insures uniform thickness of cladding and a permanent bond.

Advantages

OF LUKENS STAINLESS-CLAD STEELS

★ Corrosion resistance and product protection of solid stainless steel, at appreciable savings in cost over solid stainless.

★ Any standard specification stainless cladding, including straight chromium types 410 and 430 and chromium-nickel types 304, 316 and 347.

★ Uniform thickness of cladding.

★ 10% or 20% clad usually furnished, but any percentage from 5% to 50% obtainable.

★ Any quality carbon or alloy steel backing plate depending on the requirements.

★ Heat conductivity far superior to solid stainless. Better heat transfer properties provided by the complete bonding of the stainless cladding with the steel backing plate.

★ Readily fabricated.

★ Plates from 3/16" to over 3" thick, or up to 162" wide. It is always cheapest to fabricate the widest plate suitable.

★ Flanged and dished heads of all styles and sizes to over 18' in diameter. Lukens has specialized in forming heads for over 55 years.

Additional information on Lukens Stainless-Clad Steels is offered in the new Bulletin 338; on other Lukens Clad Steels, in Bulletin 255.

LUKENS
Nickel-Clad Stainless-Clad
Inconel-Clad Monel-Clad
STEELS
★

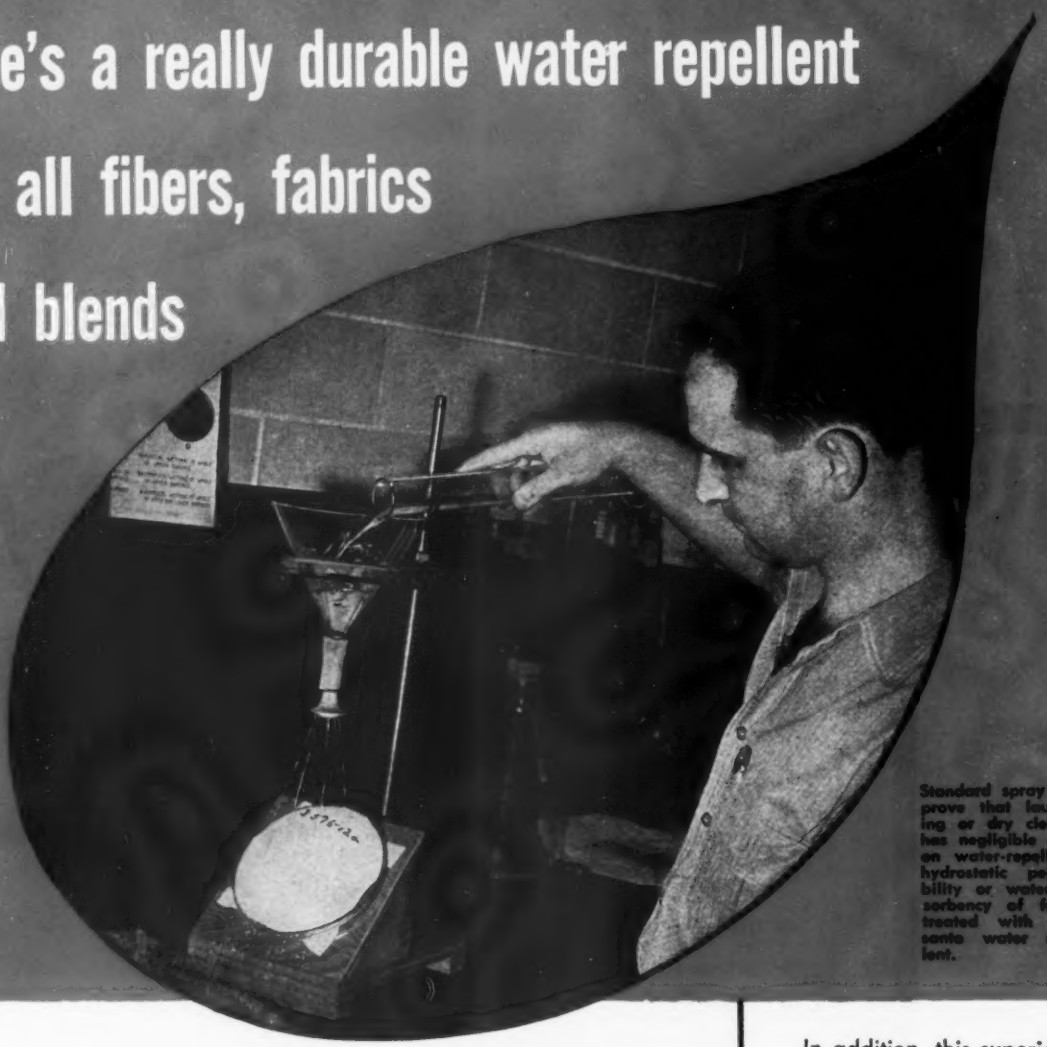
LUKENS STEEL COMPANY

World's Largest Plate Mill

356 Lukens Building ★ Coatesville, Pa.

Cable Address: Lukens

here's a really durable water repellent for all fibers, fabrics and blends



Standard spray tests prove that laundering or dry cleaning has negligible effect on water-repellency, hydrostatic permeability or water absorbency of fabrics treated with Monsanto water repellent.

This new Monsanto water repellent makes exciting news with *two* important features:

FIRST

Durable water repellency, fast to repeated laundering or dry cleaning.

SECOND

Outstanding effectiveness on *all* textile fibers including wool, aralac, nylon, acetate, cotton, rayon and mixtures of these fibers.

In addition, this superior Monsanto water repellent gives you these definite advantages:

1. Increased textile strength
2. Freedom from objectionable odors
3. Ease of application
4. Imparts soft dry finish
5. Outstanding spot resistance

For complete technical information, samples and counsel on adapting Monsanto water repellent to your fabrics, write, wire, phone: MONSANTO CHEMICAL COMPANY, Textile Chemicals Department, 140 Federal Street, Boston 10, Massachusetts.

MONSANTO
CHEMICALS AND PLASTICS
the Textile
SERVING INDUSTRY . . . WHICH SERVES MANKIND

True then . . . still true today

"Lubricated-for-Life"

● When, in 1927, New Departure first introduced the "lubricated-for-life" ball bearing, there was naturally a little skepticism on the part of the bearing users. It had never been done before!

But there were so many advantages to the user in the self-sealed ball bearing that it was not long before it "caught on."

Now, twenty years later, more than 110 million N-D-seal ball bearings have been used successfully. They are to be found wherever wheels or shafts turn.

The advantages are briefly:, Simplified assembly, the saving of many small parts, no maintenance expense, lubricant kept in — dirt is kept out.

Write for illustrated booklet "Sealed" and folder IB, showing latest types of self-sealed ball bearings, including those of standard single row width.

Nothing Rolls Like a Ball

NEW DEPARTURE

BALL BEARINGS

3459

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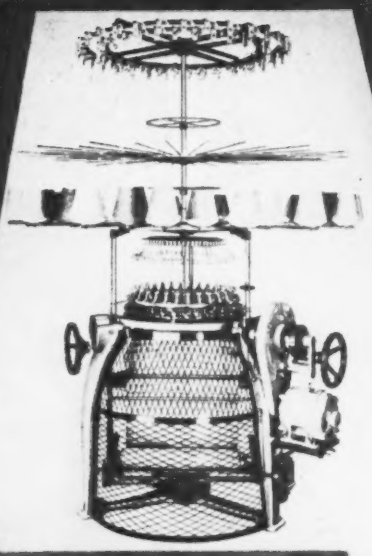


Supreme Model

R.O.

"For Jacquard-Type Knitting"

PATTERN WHEEL MACHINE for Brilliant Intricate Colorful Designs

The heart of any knitting machine is found in its knitting elements system.

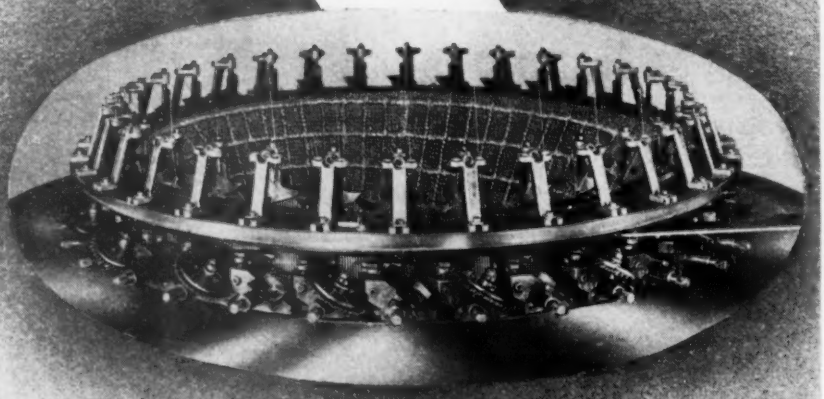
Supreme's Model RO, the latest addition to its line of high-speed production machines, is no exception. The knitting elements of Supreme Model RO have been carefully designed to meet the demands for versatile fancy pattern "Jacquard-Type" knitting. There isn't a machine in the world that can beat Supreme's Model RO in the high speed production of quality pattern, design, lay-in tuck and welt, and lace cloth.

Here are the features that make it possible:

- Double fork sections with "Flick of the Thumb" Rotary Tuck Or Knit Selectors.
- Needle raising wheel Cams with built-in hardened slider tucker cams.
- Precision pattern wheels for patterns of striking beauty.
- Simple quick change to lay-in, tuck and welt or lace cloth.

Supreme's Model RO makes it easy for you to meet shifting consumer demand since innovations in styling and novelty items are easily accommodated. It is manufactured in the 24"—32 feed type with other sizes and feeds available.

Write quickly or better still, see the Supreme Model RO in action at the Supreme factory or showrooms.



SUPREME

KNITTING MACHINE CO., INC. Dept. LS

105 JOHNSON AVE., BROOKLYN 6, N. Y.

Southern Representatives: Morris Spelsman—808 W. 5th Street, Charlotte 1, N. C.

IMMEDIATE DELIVERY

STAINLESS STEEL

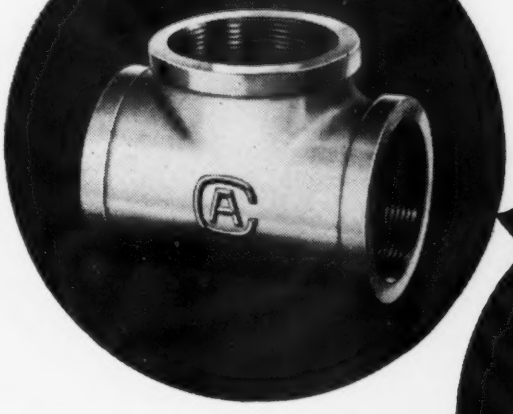
COOPER ALLOY

WELDING FITTINGS *

* SEAMLESS FORGED

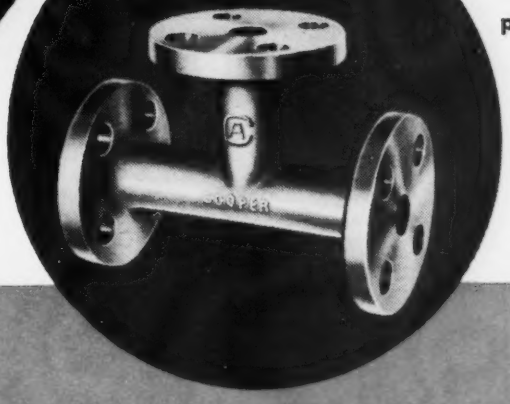
* PRESSED and WELDED

STAINLESS STEEL SCREWED FITTINGS



Cooper offers a complete line of Stainless Steel Welding Fittings including 45°, 90° and 180° elbows, tees, caps, reducers and lap joint stub ends. Each are annealed, sandblasted and passivated for maximum corrosion, abrasion and heat resisting characteristics. The unusual performance of these fittings is the result of Cooper's 25 years of Stainless Steel "know-how."

STAINLESS STEEL FLANGED FITTINGS

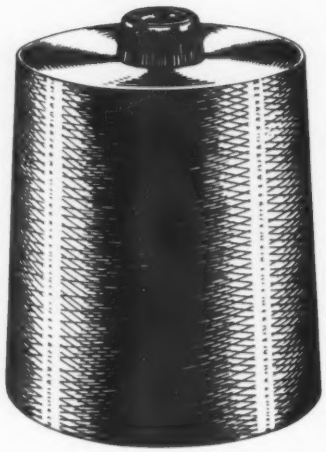


THE COOPER ALLOY FOUNDRY CO.

HILLSIDE, NEW JERSEY

World's largest producer of Stainless Steel Screwed, Flanged and Welding Fittings

RAYON STANDS AT THE THRESHOLD OF ITS GREATEST ERA



Rayon has made tremendous strides since its introduction. But never in its history has it faced such great changes as are now being pioneered by the high-tenacity fibers like SUPER-NARCO*. ★ Super-Narco has the same sleek beauty . . . the same fashion-smartness as the ordinary types of rayon yarn. But, in addition, it has amazing strength, resists heat and strain to a high degree, as it proved in its heavy-duty war uses. ★ Because Super-Narco combines eye-appeal with undreamed of practical features, it opens wide the doors to new achievements in fabrics for dresses, lingerie, negligees, and all types of home furnishings textures where wearing strength is important.

NARCO*

NORTH AMERICAN RAYON

*Narco is the registered trade-mark of the North American Rayon Corporation • 261 Fifth Avenue • New York, N. Y.

Better Processing for All Textiles

Woolens . . . S/V Woolrex Oils improve carding and spinning. Scour out easily.

Worsteds . . . S/V Worstex Oils lubricate stock uniformly. Improve spinning.

Water Repellents . . . S/V Fabrisecs give maximum repellency with minimum amounts.

Finishing . . . S/V Finishing Oils give excellent wetting, re-wetting and softening effects.

Shrinkage Process . . . S/V Finishing Oils insure quick, uniform re-wetting.

Rayon Processing . . . S/V Rayon Oils add softness to rayon fibers.

S/V FABRISECS **Give Maximum Water-Repellency to These and Many Other Products**

HERE'S THE ANSWER to effective, low-cost water-repellency for a wide variety of textile products.

Easily applied with equipment in general use, S/V Fabrisecs are highly concentrated compounds designed to give maximum repellency with minimum amounts used. They penetrate rapidly and uniformly. After the cloth passes through squeeze rolls, it merely requires drying at temperatures varying between 225-300°F. No curing is necessary.

After application, these products remain unaffected by atmospheric temperatures and water. There is no objectionable odor.

S/V Fabrisecs are marketed in two grades—S/V Fabrisec AA for the one-bath method of application and S/V Fabrisec MP, for the two-bath process. See your Socony-Vacuum Representative for details.

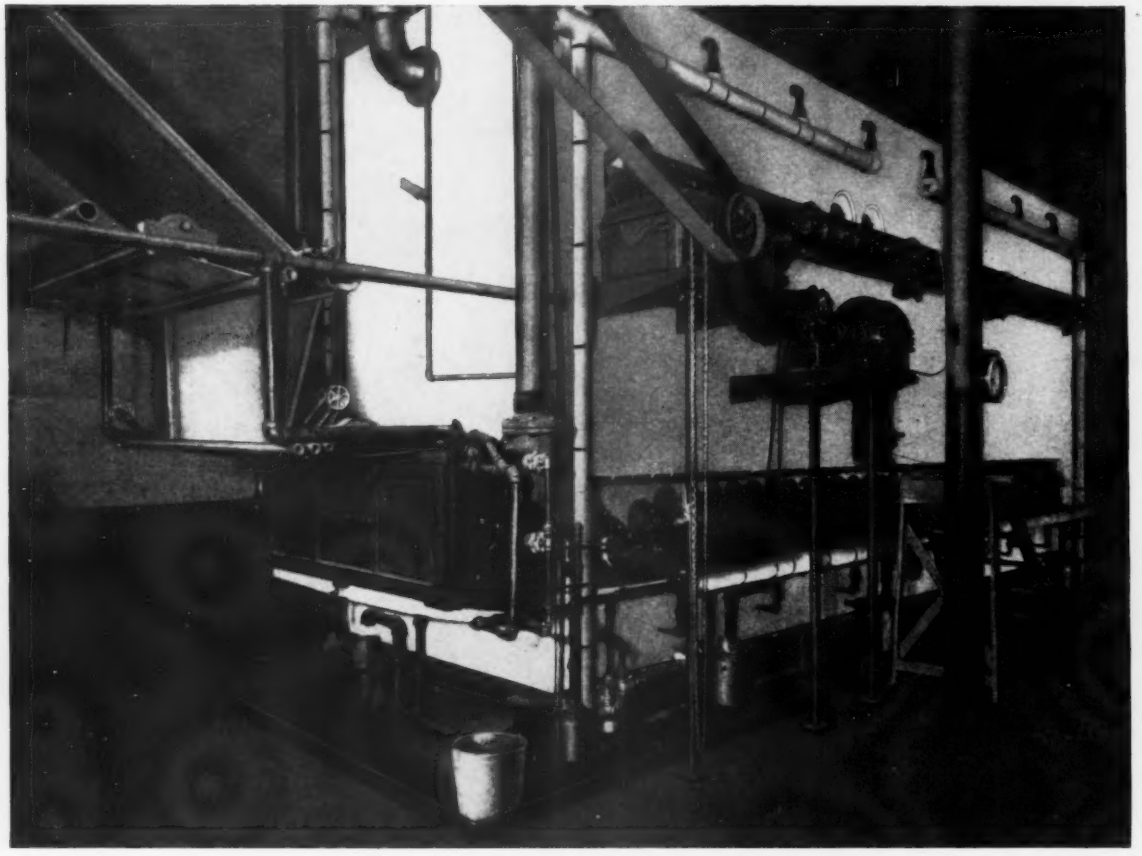
SOCONY-VACUUM OIL CO., INC., 26 B'way, New York 4, N. Y., and Affiliates: Magnolia Petroleum Co., General Petroleum Corp.

Process Products
SOCONY VACUUM

Socony-Vacuum Process Products

TUNE IN THE MOBILGAS PROGRAM — MONDAY EVENINGS, 9:30 E.S.T. — NBC

AGING MACHINE



The New England Butt Company Ager is designed primarily to avoid damage to fabrics due to condensation and tension. This design includes a special feature a pre-heating chamber or ante-chamber that brings the cloth to temperature before entering the ager proper.

Rolls are operated in specially designed ball bearing housings, so designed that a minimum of maintenance is required.

Machines may be operated on either the pond or the dry system, and a minimum amount of steam is required.

Write for Details

NEW ENGLAND BUTT COMPANY

ESTABLISHED 1842

304 PEARL STREET

PROVIDENCE 7, RHODE ISLAND, U. S. A.

SANDOZ PRESENTS *the color achievement of the month*

Translation From The Oriental BY KARASTAN

Here, power-loomed in the United States, is a rug that captures the world-famous beauty of a handwoven Oriental. Karastan, a product of Fieldcrest Mills, Leaksville, North Carolina, faithfully preserves the soft and lustrous colors of the original to give the American home a floor covering that would delight an Eastern potentate... at a price that meets the average American budget.

To be sure of colors that, first, are authentic and, second, can be depended on to resist the effects of time and wear, Karastan counts, among its suppliers, Sandoz—the firm that so many look to for colors that are timely—and timeless.

Prominent among Sandoz colors fulfilling the requirements of both the manufacturer and the consumer is the Brilliant Alizarine Milling Blue BL, joined recently by the new Brilliant Alizarine Milling Blue 2RL (pat. app. for), a rich royal blue shade. Both these blues have "men's wear" fastness without the need of chrome. Other colors in this same group are Brilliant Alizarine Milling Blue G and SL, Alizarine Light Brown BL, and Brilliant Alizarine Light Violet FFR.

For acid, chrome or direct dyes... or auxiliary chemicals... for both natural and synthetic fibres... be guided by the successful "color achievements" you have been seeing in these Sandoz advertisements. Sandoz application laboratories are located in New York, Boston, Philadelphia, Los Angeles, Charlotte, Toronto, where stocks in wide range are carried.

Other branches are in Chicago, Paterson and Providence.

SANDOZ CHEMICAL WORKS, INC., 61 VAN DAM STREET, NEW YORK 13, N.Y.

SAND Z *thinks ahead with textiles* S SANDOZ

THE FLEXIBLE WINDING MACHINE that gives your customers the one best angle of wind

A major advantage of the exclusive Rotary Traverse, the Roto-Coner's* one-piece driving drum and traverse guide, is the opportunity to wind all counts of yarn without having to change winding speed. There are no cams, so there is no need to sacrifice production when winding the coarser counts.

This also gives an advantage to the knitter because all packages wound on the Roto-Coner* have the same minimum number of winds desirable for trouble-free delivery.

The flexibility of the Roto-Coner* also includes its suitability for a wide range of yarns—cotton, wool, worsted, spun rayon—and of package types—paper cones and tubes, wood cones for warping, wood tubes for twisting, and dye packages.

A new set of traverses is easily installed—there is no grease to make the job messy.

For complete information about the versatility of the Roto-Coner*, request Bulletin 144 (knitting) or 244 (warping).

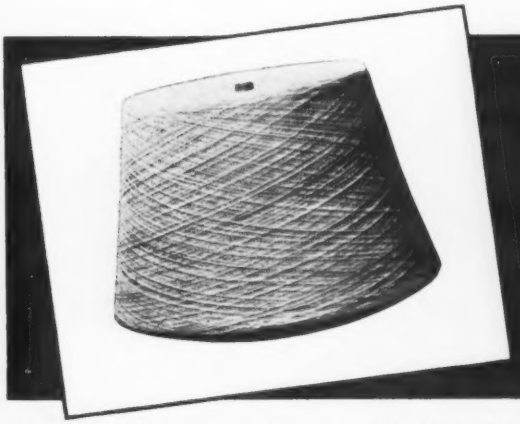
Address Universal Winding Company at Providence, Boston, Utica, Charlotte, Atlanta, Chicago, Los Angeles, Montreal or Hamilton. 23-6-17

Yarn Quality Protected Against Injury

The simplicity of the one-piece package driving and yarn traversing device avoids injury to the yarn which might affect subsequent operations. There are no settings to be made—no reciprocating parts to wear. One standard groove arrangement is used for all yarn counts. Slub catchers are set uniformly and locked against getting out of adjustment.

Easily Convertible from Coning to Tubing

One side can be equipped for coning, the other for tubing, with a separate Empty Bobbin Conveyor (A, above) for each. When converting, the full shaft of Rotary Traverses is easily lifted out (lower photo) and replaced with another shaft having desired groove arrangement. No grease, no small parts to handle, sort and store.



ROTO-CONER* LEESONA REG. U.S. PAT OFF.

Open-Wind Cones for Knitting

WARPING CONES • DYEING PACKAGES • PARALLEL TUBES FOR TWISTING

Shortage of BON?

don't worry...

Hydroxanil

TAKES ITS PLACE!

TRUE wash fast DEVELOPED BLACKS giving uniform results from batch to batch are assured with HYDROXANIL and Maracel Developed Black A. Blacks produced with HYDROXANIL require no shading with orange or yellow as customary with BON thereby eliminating yellow stains on white trimmings.

SAVES TIME and TROUBLE

HYDROXANIL is simple to use—requires no caustic soda. Simply stir into boiling water and add to developing bath. Developing may be carried out in the diazotizing solution if desired to save additional rinsing operations and running time. (Simple instructions sent upon request). HYDROXANIL may be added at any pH range from 4½ to 7 and will operate at any temperature from 100° to 140°F.

...Develops Complete in 30 Minutes!

No excess rinsing or soaping required! Two batches dyed in the time usually required for one.

MARCO PRODUCTS

MAHER COLOR & CHEMICAL CO.

FACTORIES AND LABORATORIES

355 West Ontario Street, Chicago 10, Ill.

2327 East Eighth Street, Los Angeles 21, Calif.

"NEW CARD CLOTHING Will *pep up* Our Whole Mill!"

A good superintendent knows that high grade carding means increased operating efficiency in every other department . . . he realizes the importance of getting production off to the right start.

With new Tuffer card clothing on your cards you will increase production and obtain the quality so necessary for strong, even yarns. You know this means increased output in the card room, spinning room and in the weave room.

Let a Howard Bros. representative inspect your card clothing. He is qualified to make recommendations that will improve production throughout your mill!

HOWARD BROS. MFG. CO.
WORCESTER 8, MASSACHUSETTS

Southern Plants: Atlanta, Ga. and Gastonia, N. C. **Branches:** Philadelphia, Pa. and Blanco, Texas
Direct Representation in Canada

A-2

TUFFER CARD CLOTHING **IMPROVES PRODUCTION ALL ALONG THE LINE**

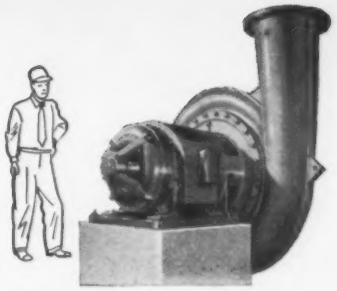
Handling Air or Gas?

ALLIS-CHALMERS BUILDS 5 TYPES OF EQUIPMENT FOR YOU!

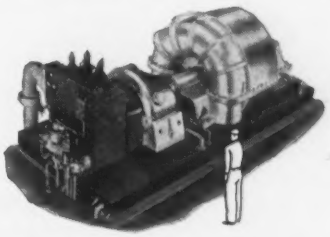
THAT MEANS we can engineer . . . *to your exact job requirement* . . . a blower, compressor or dry vacuum pump. Further, we are able to build it *standard or special* — whichever you need.

Allis-Chalmers experience in this field goes back half a century. Its engineers have fingertip acquaintance with many process problems and applications. The fact that A-C builds many varieties of high-speed rotating machinery is your assurance of air and gas handling equipment that will be *coordinated* with your drive and power requirements.

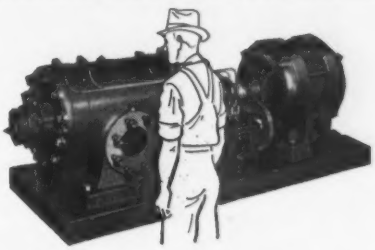
A *qualified* engineer in our nearby Sales Office is ready to discuss your future needs. ALLIS-CHALMERS, MILWAUKEE 1, WIS.



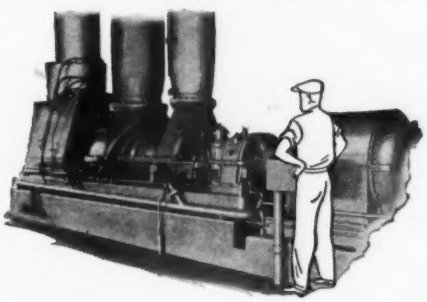
SINGLE STAGE BLOWERS Discnarge nozzle can be arranged in any of 24 positions. Cast casing provides rigidity, longer life, smoother operation . . . deadens machine noises, eliminates vibration. Available in pressure ranges from one to 6.50 lbs.



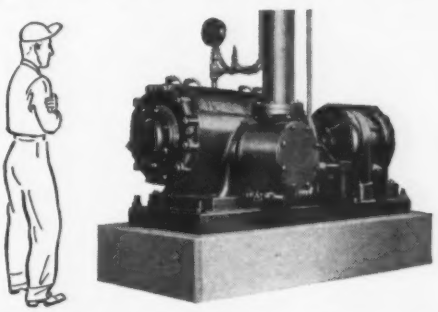
MULTI-STAGE BLOWERS Centrifugal type, for boosting, exhausting, circulating. Cannot build up dangerous pressures. Have enclosed backward-bladed impeller wheels. Pressure volume curve favorable to parallel operation. Inlet volumes to 130,000 cfm, air pressure to 35 lbs. gauge uncooled. Other ratings for special application.



ROTARY COMPRESSORS, sliding vane type. Air is compressed in cells formed by blades moving freely in and out of longitudinal slots in rotor eccentric to its casing. Quiet, smooth operation. Units start unloaded. Capacities for 5 to 35 psi-g.



AXIAL COMPRESSORS *Good base load machines.* Handle large fixed volumes of air with pressure variations over a comparatively long range. Used in connection with *gas turbines* and for high velocity wind tunnel operations. Able to compress to 60 lbs. gauge with high efficiencies. Cannot build up dangerous pressures.



DRY VACUUM PUMPS Same principle as rotary compressors with exception that inlet is hooked up to chamber to be evacuated and exhaust is open. No inside valves. Saves floor space. Range 2½ to 28½ inches hg. 52 to 5750 cfm, three to 250 hp.

A 2163

ALLIS-CHALMERS

One of the Big 3 in Electric Power Equipment — Biggest of All in Range of Industrial Products

1847 1947 A CENTURY OF SERVICE to Industry THAT MADE America Great

GET THE "LOAD" OFF YOUR MIND WITH AIR POWER

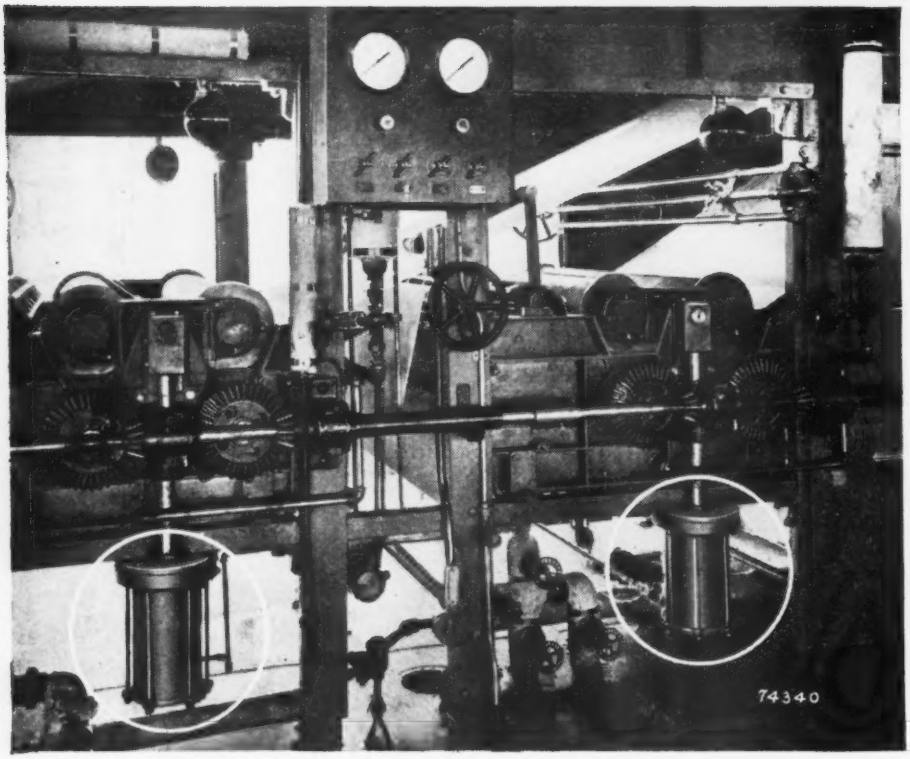


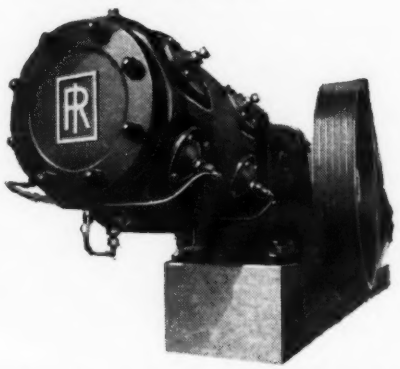
Photo courtesy the Foxboro Co.

Slasher Roll Loading is now on the growing list of textile mill jobs that are done best and cheapest with Air Power.

- ✓ Continuously automatic, compensating, cushioned, roll loading.
- ✓ Eliminates calculations, corrections, bouncing of rolls, overloading, supervision.
- ✓ Air powered cylinders and air controls take full charge.

OTHER SPOTS AIR-POWERED FOR SMOOTHER PRODUCTION AND LOWER COSTS:—

- HUMIDIFICATION
- GUIDERS
- WASHER ROLLS
- LIQUID AGITATION
- VISCOSE TRANSFER
- DRY CLEANER
- MERCERIZER
- SANFORIZER
- DYEING
- YARN CONDITIONING
- YARN DRYING
- BOBBIN STRIPPING
- KNOTTING
- CONVEYING
- CONTROLLING
- OIL ATOMIZING
- PAINTING
- HOISTING
- CLEANING MACHINERY
- CONSTRUCTION
- MAINTENANCE



There's an I-R Air Compressor in a size and type to suit the requirements of any mill. Our engineers are always ready to discuss your problems with you.

SEVENTY-FIFTH IR ANNIVERSARY

COMPRESSORS • AIR TOOLS
ROCK DRILLS • TURBO BLOWERS
CONDENSERS • CENTRIFUGAL PUMPS
OIL & GAS ENGINES

Ingersoll-Rand

11 BROADWAY, NEW YORK 4, N. Y. 1-872

Smooth, Tough Formica *prevents Seconds!*

In the textile industry one of the strongest reasons for using Formica parts in production equipment is the fact that its smooth, tight surfaces permits delicate fabrics to slide over it without ever snagging them—and the saving in seconds, so created, very quickly pays for the material.

Particularly in the production of fine knitted fabrics is that important, and that is why Formica hosiery carriers and Formica hosiery trays have had such an enthusiastic reception from mill managements.

So tough is the material that it resists shattering and splintering under the most severe use and maintains its original surface through a long life. It is non-absorbent and very quickly washed and cleaned.

Formica finds many other uses in mills of all kinds: Picker sticks, sweep sticks, loom box linings, separators, inspection table tops and many others.

FORMICA

TRADE MARK REG. U.S. PAT. OFF.

THE FORMICA INSULATION CO.

4668 SPRING GROVE AVENUE, CINCINNATI 32, OHIO

Water-Soluble Waxes

Coupling Agents

Wetting Agents

Lubricants

Leveling Agents

Spot Removing Solvents

Emulsion Chemicals

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San Francisco 4, Calif.	114 Sansome Street	DOuglas 1640
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SYNTHETIC ORGANIC CHEMICALS

CARBIDE AND CARBON CHEMICALS CORPORATION

Unit of Union Carbide and Carbon Corporation

UCC

30 East 42nd Street, New York 17, N. Y.

RIEGEL TEXTILE
Mounts Its Looms and Warpers on

UNISORB
without
BOLTS OR LAG SCREWS

Draper Looms and Barber-Coleman High Speed Warpers in the Riegel Textile Corporation's mills at Ware Shoals, S. C., are anchored on wood floors with Unisorb without bolts or lag screws. This modern method of anchoring is simple, quick and inexpensive. A special cement binds the Unisorb to the machine feet and the floor — permanent set absolutely prevents any riding.

By controlling vibration, Unisorb reduces shutdown hours — saves on machine repairs and building maintenance. By providing quieter surroundings, it increases efficiency — helps toward greater production.

Send for sample and complete specifications.

LOOK FOR THE RED CENTER AND UNISORB BRAND MARK

THE FELTERS COMPANY

210-W SOUTH STREET, BOSTON, MASSACHUSETTS

Offices: New York, Philadelphia, Chicago, Detroit
Sales Representatives: San Francisco, St. Louis.
Mills: Johnson City, N. Y.; Millbury, Mass.; Jackson, Mich.

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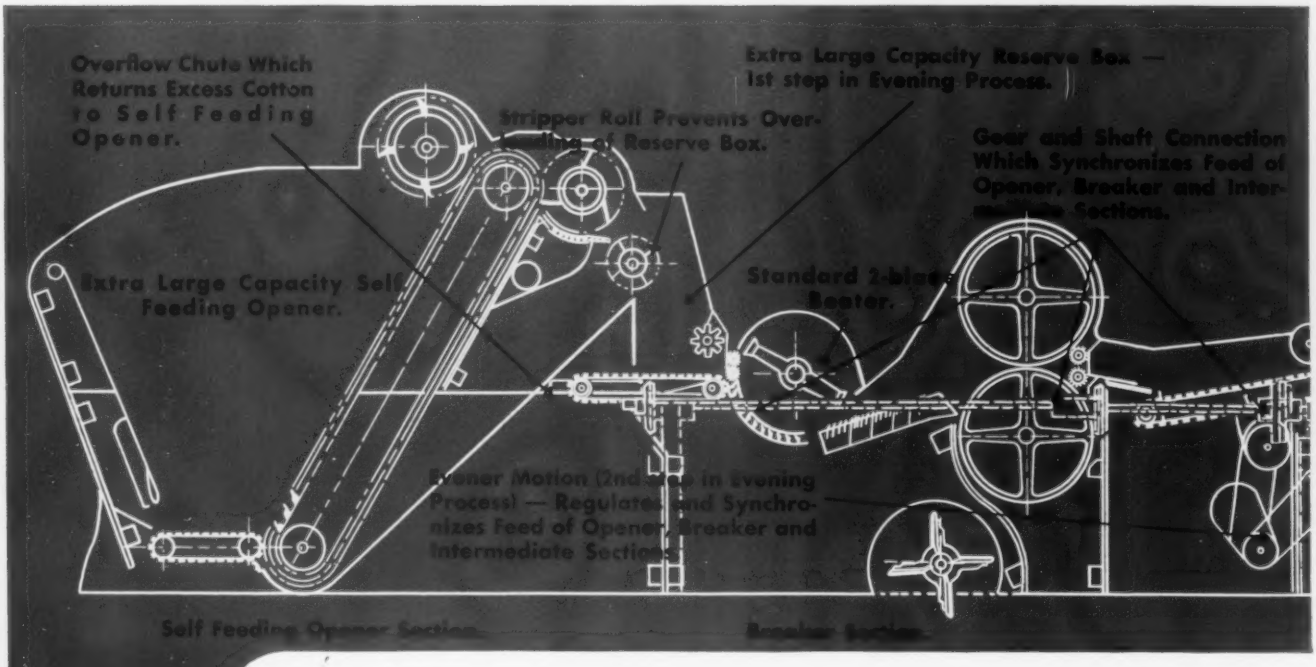
H&B A-1 ONE PROCESS PICKER-


Overflow Chute Which Returns Excess Cotton to Self Feeding Opener.
Extra Large Capacity Reserve Box — 1st step in Evening Process.
Stripper Roll Prevents Over-
Reserve Box.
Gear and Shaft Connection Which Synchronizes Feed of Opener, Breaker and Inter-
Sections.
Extra Large Capacity Self
Feeding Opener.
Standard 2-blade
Beater.
Evener Motion (2nd
in Evening
Process) — Regulates
Synchro-
nizes Feed of Opener, Breaker and
Intermediate Section
Self Feeding Opener Section
Breaker Section

THE H & B A-1 One Process Picker has established an admirable record for picker room performance. Modern Mills which demand exacting lap tolerance consistently report top efficiency, with rejected laps running as few as 5 per 1,000.

This exceptional lap uniformity is due to an evening process which starts at the Reserve Box in the Opener Section and continues through the Breaker and Intermediate to the Finisher Section. At no point, once the lap is started, is the evener process interrupted.

Our patented Reserve Box (in the Opener Section), which acts as No. 1 evener, is shown in the above illustration. The volume of raw stock in this box is kept constant, thus providing a uniform supply of stock to the feed apron delivering to the Breaker Section.

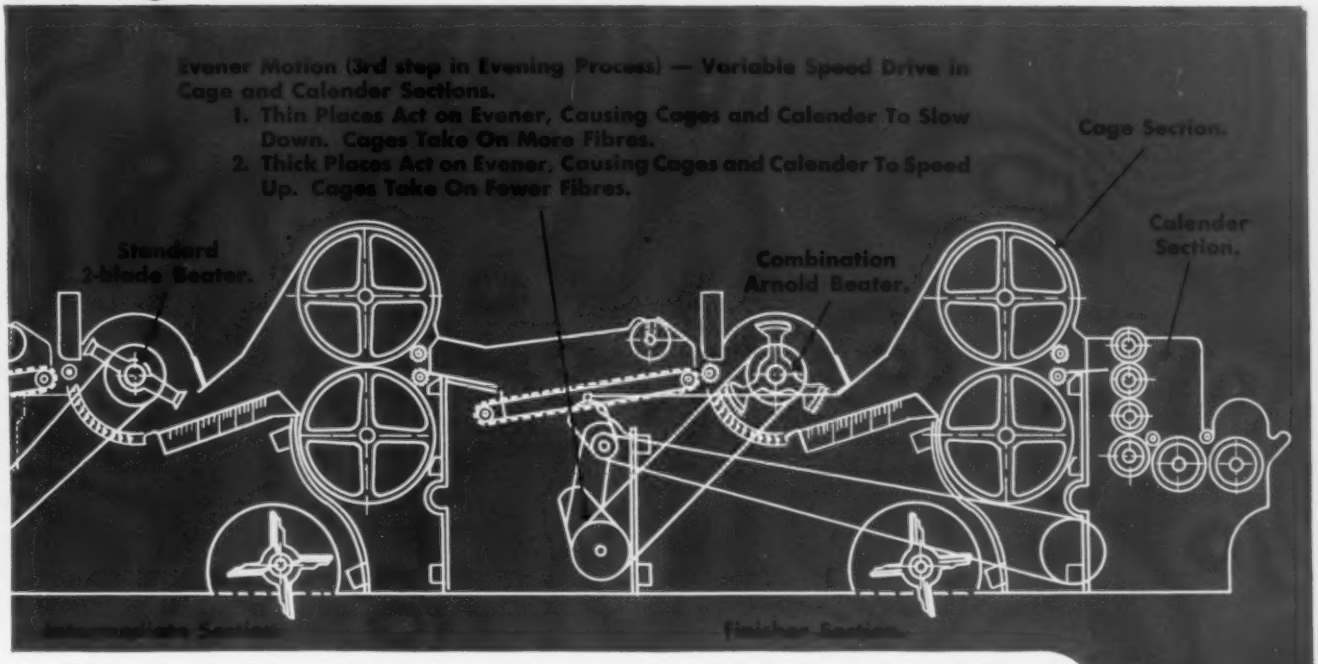
The evener motion in the Intermediate Section is also shown. Here a cone evener regulates and synchronizes the rate of feed of the Opener, Breaker and Intermediate Sections. The lap produced at the Intermediate Section is so nearly perfect that the final evener process in the Finisher Section is greatly simplified.

H&B AMERICAN

Builders of Modern

FACTORY, EXECUTIVE OFFICES AND EXPORT

99% OF LAPS PRODUCED PERFECT


Evener Motion (3rd step in Evening Process) — Variable Speed Drive in Cage and Calender Sections.
1. Thin Places Act on Evener, Causing Cages and Calender To Slow Down. Cages Take On More Fibres.
2. Thick Places Act on Evener, Causing Cages and Calender To Speed Up. Cages Take On Fewer Fibres.
Cage Section.
Calender Section.
Standard 2-blade Beater.
Combination Arnold Beater.
Intermediate Section
Finisher Section

The final evener motion in the Finisher Section, where our patented variable speed calender and cage drive is used, is also shown above, with an explanation of how it operates.

3 BEATING OPERATIONS

The H & B A-1 One Process Picker uses 3 beaters to achieve a more thorough opening and cleaning of the fibres. Gentle handling of the fibres is insured by proper beater settings and proper beater speeds so as to deliver the proper number of blows per inch. Even the most delicate rayon fibres can be safely processed in this way.

The Combination Arnold Beater, manufactured exclusively by H & B, ordinarily used in the Finisher Section, combines the positive effectiveness of a blade beater and the gentle carding action of a Kirchner beater.*

*Any combination of beaters adequate for the processing of any raw stock can be supplied.

MACHINE CO.
Textile Machinery
DIVISION — PAWTUCKET, RHODE ISLAND, U.S.A.
BRANCH OFFICES
ATLANTA, GA.
815 CITIZENS AND SOUTHERN NATIONAL BANK BUILDING
CHARLOTTE, N. C.
1201 JOHNSTON BUILDING

AMERICAN MONORAIL

Automatic Monitor Cleaner

LOWER COSTS *with* MONITOR CLEANERS

A high velocity fan unit prevents accumulation of lint by traveling around on a loop of track suspended with the monitor.

To eliminate trouble and expense of cleaning the monitor in mills of this particular construction, an automatic traveling fan unit replaces broom, mop and air hose.

At regular intervals, a blast of air is diffused in all directions, preventing accumulation of lint on structural members within the monitor. The cleaning interval is determined by conditions of mill-operation and unit can be adjusted accordingly.

American MonoRail Monitor Cleaner consists of a standard ¼ h.p. MonoTractor for driving unit around loop of track suspended within the structure. Blast of air is obtained from a propeller type fan with special conical diffuser mounted in steel frame.

For increased production and lower cleaning costs, talk to your American MonoRail Engineer.

Advantages—

1. Prevents accumulation of lint in the monitor.
2. Eliminates cost of cleaning with broom or air hose.
3. Improves quality of yarn processed beneath monitor.
4. Eliminates danger of accident with hand cleaning.
5. Tends to distribute humidity evenly over work below.
6. Helps ventilation during warm months.
7. Prevents dead warm air pocket in cold months.
8. Assures full production during cleaning.

THE AMERICAN MONORAIL COMPANY

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PAT. PENDING

MAGNETIC HUMP

APPROVED BY

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184 HIGH STREET, FM BOSTON 10, MASS.

ERIEZ MANUFACTURING COMPANY CO., ERIE, PA. U.S.A.

Adaptors of any length to fit various diameter pipelines optional
2nd Eriez Magnet gives double protection against Tramp Iron
Eriez
MAGNETIC HUMP
UNCLEAN MATERIAL ENTERS HERE
MATERIAL CLEANED OF TRAMP IRON EXITS HERE
Tramp Iron removed by 1st Eriez Magnet

Eriez Non-Electric Magnetic Humps have been officially approved by Associated Factory Mutual Fire Insurance Companies. They provide effective magnetic protection against tramp iron in textile opener lines -- as proven by wide use and acceptance by textile mills all over the country. The seal of approval of Associated Factory Mutual (reproduced above) will be placed on each ERIEZ Magnetic Hump that leaves the Eriez Mfg. Co. factory.

CLIP AND MAIL TODAY

Please send bulletin No. 104 and the following:

Data on Eriez Magnets for: TW 2

☐ Wool ☐ Cotton ☐ Worsted ☐ Other processing lines

Eriez data on: ☐ Gravity Conveyor ☐ Mechanical Conveyor

☐ Pneumatic Conveyor ☐ Equipment on Processing Machines

Name.....

Address..... City..... State.....

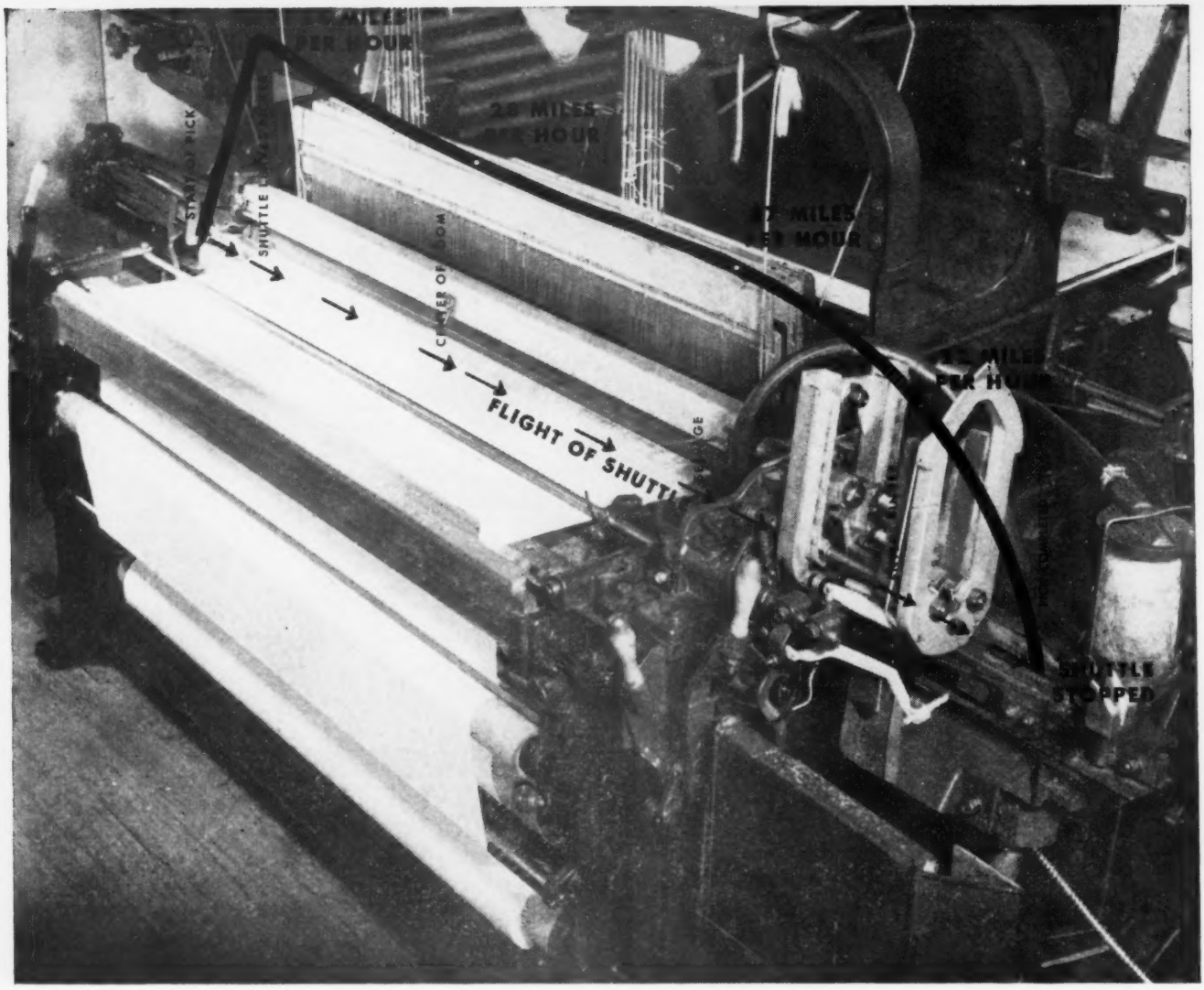
For Complete Textile Magnetic Protection . . . See Eriez First

For full details on Eriez Magnetic Protection clip coupon and mail today.

Eriez EAR'EEZ

ERIEZ MANUFACTURING CO.

501 EAST 12th ST. ERIE, PENNA.



Here's one answer to the question:

"What's the Speed of a Loom Shuttle?"

That curve, just above, tells a startling story. It shows the shuttle starting from rest at the left of a dobby loom—*and reaching a maximum velocity of 34 miles per hour in 1/30th of a second!* This acceleration, from rest to 34 miles per hour, is reached within a distance of 10 inches.

It also shows that, at 172 picks per minute, the shuttle completes its travel from box to box in a little less than 1/5 of a second. And in that time it decelerates sharply as it enters the selvage of the fabric—and again as it contacts the binder. Then the shuttle comes to a dead stop and the operation is almost instantly repeated in the opposite direction. So there's one illuminating answer to the question: "What's the speed of a shuttle?"

Now, to the next question: "How much faster can you make it go?", the answer is never exact or final.

For C & K engineers have steadily increased shuttle-speeds. And they are always working to move these speeds up, *and up,* with the single thought of making it possible for *you* to roll out more and more yardage, of higher and higher quality, in shorter and shorter time.

Crompton & Knowles Loom Works

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PHILADELPHIA, PA. • CHARLOTTE, N. C. • ALLENTOWN, PA.
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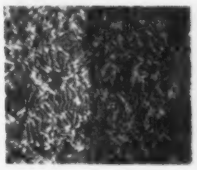
Pawtucket, R. I.

between Today's Knowledge... and Tomorrow's Looms

Flexible Wrinkle for
DECORATIVE FABRICS and PAPERS

What it is...



UNIFORM WRINKLE

Wrinkle is an industrial finish, the textured surface of which is produced by chemical action. Wrinkle coatings are produced under many broad patents by approximately 200 leading manufacturers of industrial finish materials.

Application Information...

PINE TREE WRINKLE

Wrinkle coatings are applied by dipping, spraying, knife-coating or roller-coating. Drying is in oven or by infrared. Some Wrinkle coatings can be air-dried. No special equipment is required. Wrinkle produces beautiful decorative finishes economically, without expensive embossing plates. Try Wrinkle . . . for either production quantities or short runs.

Why you should use WRINKLE... ...its advantages

SAG WRINKLE

Wrinkle is the most versatile of modern industrial coatings. It comes in all colors and black; the Wrinkle texture or pattern may be controlled to your specific requirements. Wrinkle is hard, durable, long-lasting, practically scratch- and mar-proof. Flexible Wrinkle is formulated with a base of synthetic rubber or resin emulsion. It won't crack, peel or chip. No other coating material surpasses flexible Wrinkle for eye-catching, merchandising "buy-appeal." Write us TODAY for further information on flexible Wrinkle.

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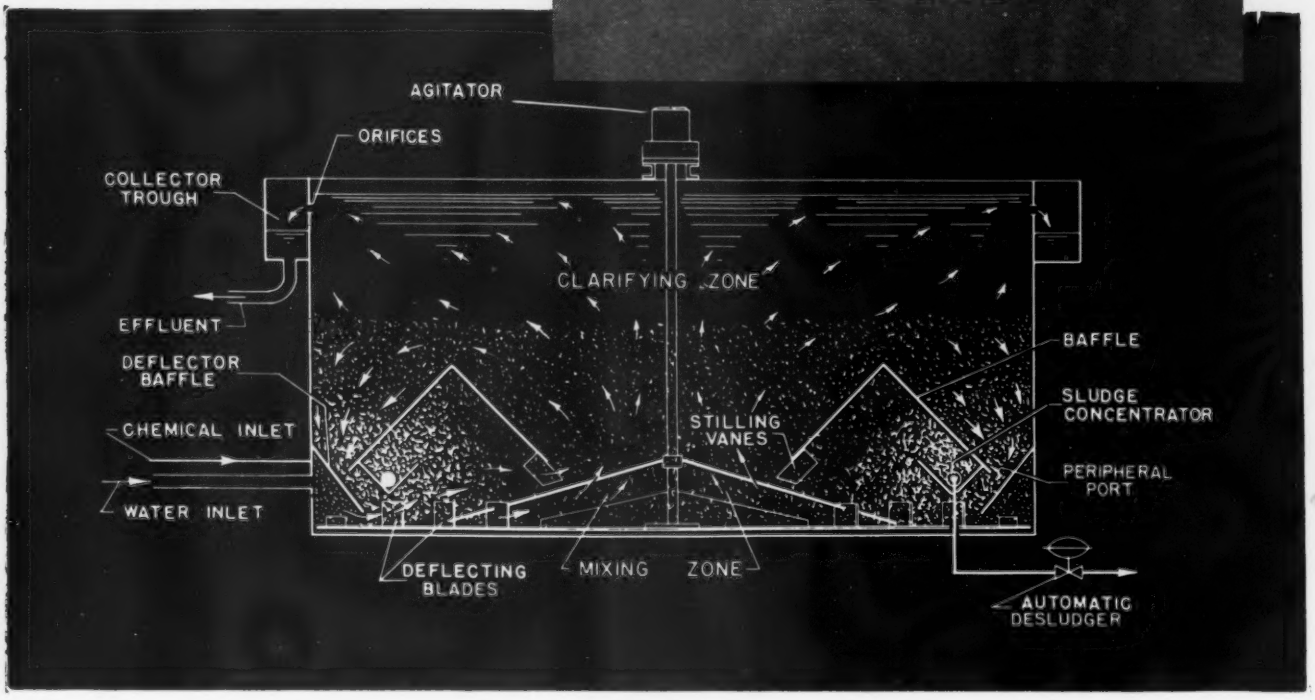
The LIQUON Sludge Contact Reactor



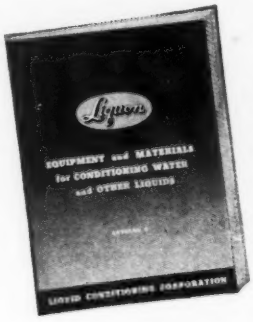
If your water supply requires the removal of hardness, turbidity, color, iron, manganese, silica or fluorides, investigate the LIQUON SLUDGE CONTACT REACTOR.

This highly efficient unit, by proper contact with a deep suspended blanket or bed of sludge, coagulates or softens the water in a fraction of the time required by ordinary mixing and settling tanks, and does so more completely, in less space, and at less cost.

Also, note these important distinctive benefits of design:

- **Cylindrical tank — saving in concrete costs**
- **All the chemicals are completely utilized — positive sludge recirculation**
- **No shut downs for removal of sludge deposits from the bottom of the unit — bottom large slow-moving agitator**
- **Clarified water thoroughly separated from the sludge**
- **Horizontal flow rather than upflow to avoid sludge carry-over as water approaches outlet trough**
- **Concentrated sludge discharged automatically**

The LIQUON SLUDGE CONTACT REACTOR "stabilizes" the water when used in connection with the cold lime soda process. Write for complete information.



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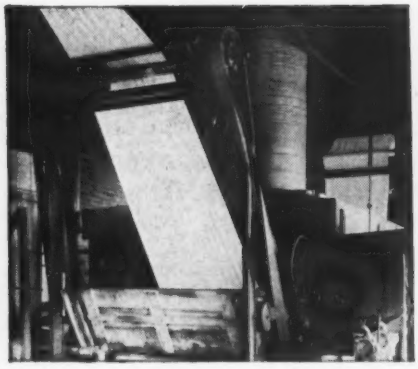
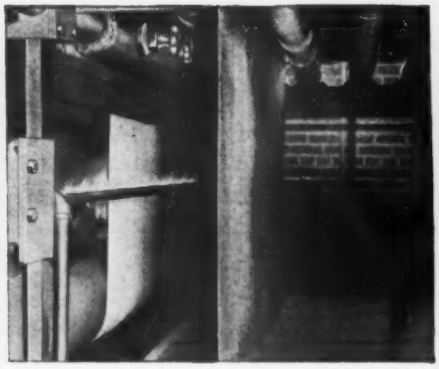
TEXTILE PROCESS... Singeing

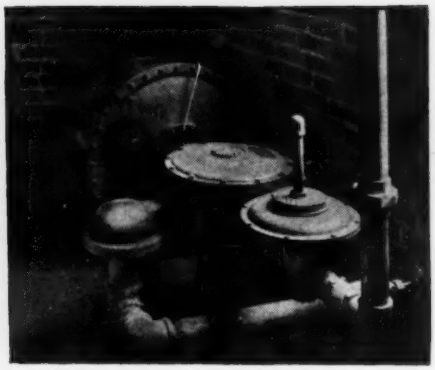
MATERIAL ... Cotton Cloth

PROCESSING RATE.. 225 to 300 yards/minute

FUEL... GAS







There's nothing new about this utilization of the productive flames of GAS for processing of cotton cloth. The Cold Spring Bleachery at Yardley, Pennsylvania, has been operating Gas-fired singeing equipment since 1933.

The simplicity of Gas-fired Textile Processing Equipment is illustrated in the accompanying photographs. Cotton cloth, 36 inches to 72 inches wide, travels vertically past the horizontal singeing burners. A premixing machine with automatic regulator supplies the properly controlled GAS singeing flame.

So accurate is the control equipment, and so dependable is the GAS supply, that the cloth is uniformly processed regardless of width, and the singeing accomplished without burning the cloth.

The flexibility of GAS and modern Gas Equipment assure processors that equipment for textile operations such as sizing, calendering, tenter frame drying, can be installed with minimum capital expenditure and minimum maintenance time or effort.

To meet present-day production goals you need GAS, the production-line tool, wherever heat is required in textile processes. The Industrial Engineer at your local Gas Company has assembled information on the application of Gas Equipment which you will find of real value.

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so easy to weave . . .
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GREATER TENSILE STRENGTH

With Firestone *Velon* you have the advantage of fewer interruptions, less delay and reduced waste caused by breaks. This new yarn has a tensile strength six times greater than metal, far surpassing any textile thread in your experience.

Yet *Velon* is as easy to work as conventional yarns, which means smooth production. No special equipment or skill is required to make the wonderful fabrics that defy dirt, staining, shrinkage, fading, wear and age — and sell so easily. Write Firestone, Akron, for details, for technical assistance.

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BEST TODAY STILL BETTER TOMORROW

Velon*

*TRADE MARK

THE FABRIC OF TOMORROW ON THE LOOMS OF TODAY

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Drive shaft mounted on self-aligning ball bearings.

Cans have solid stainless steel shells.
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Cans mounted on ball bearing self-aligning expansion and non-expansion journals.
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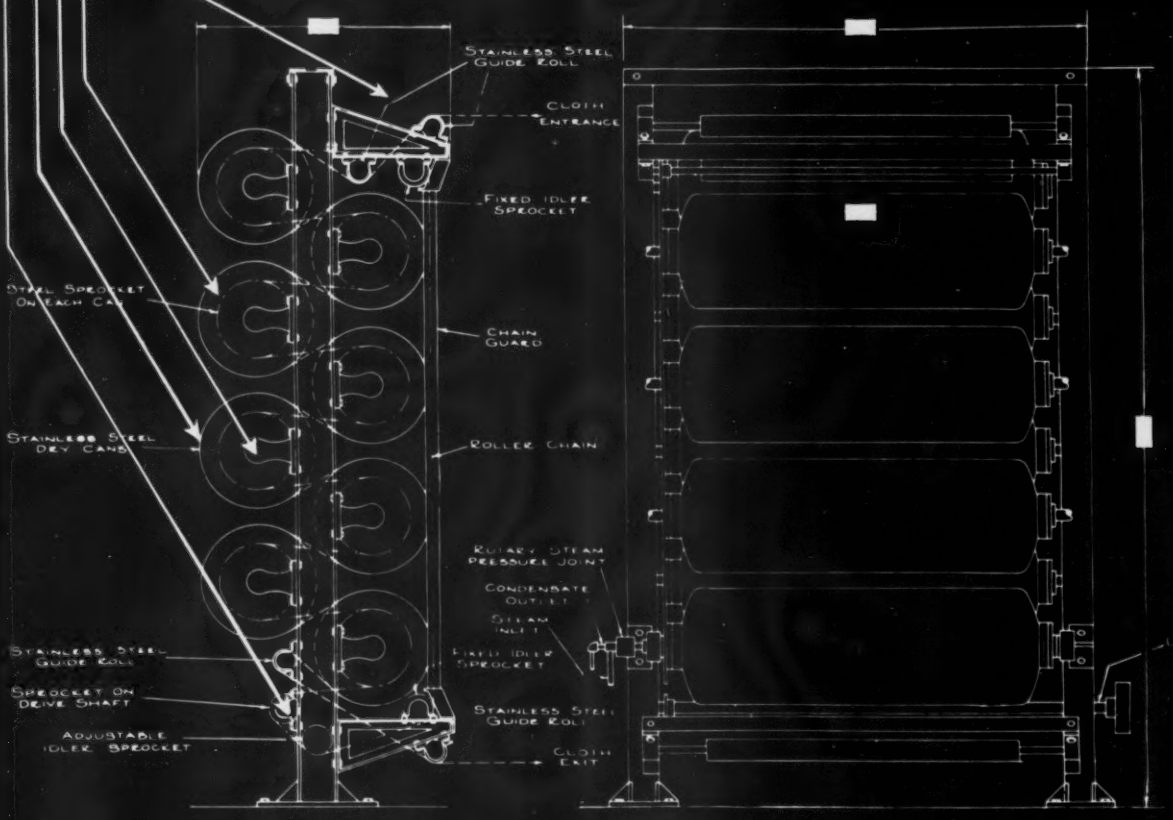
Guide rolls are stainless steel
Guide rolls mounted on self-aligning ball-bearings



Engineers—Designers—and Builders of Back Dryers, Can Dryers, Kiers, Kettles, etc.

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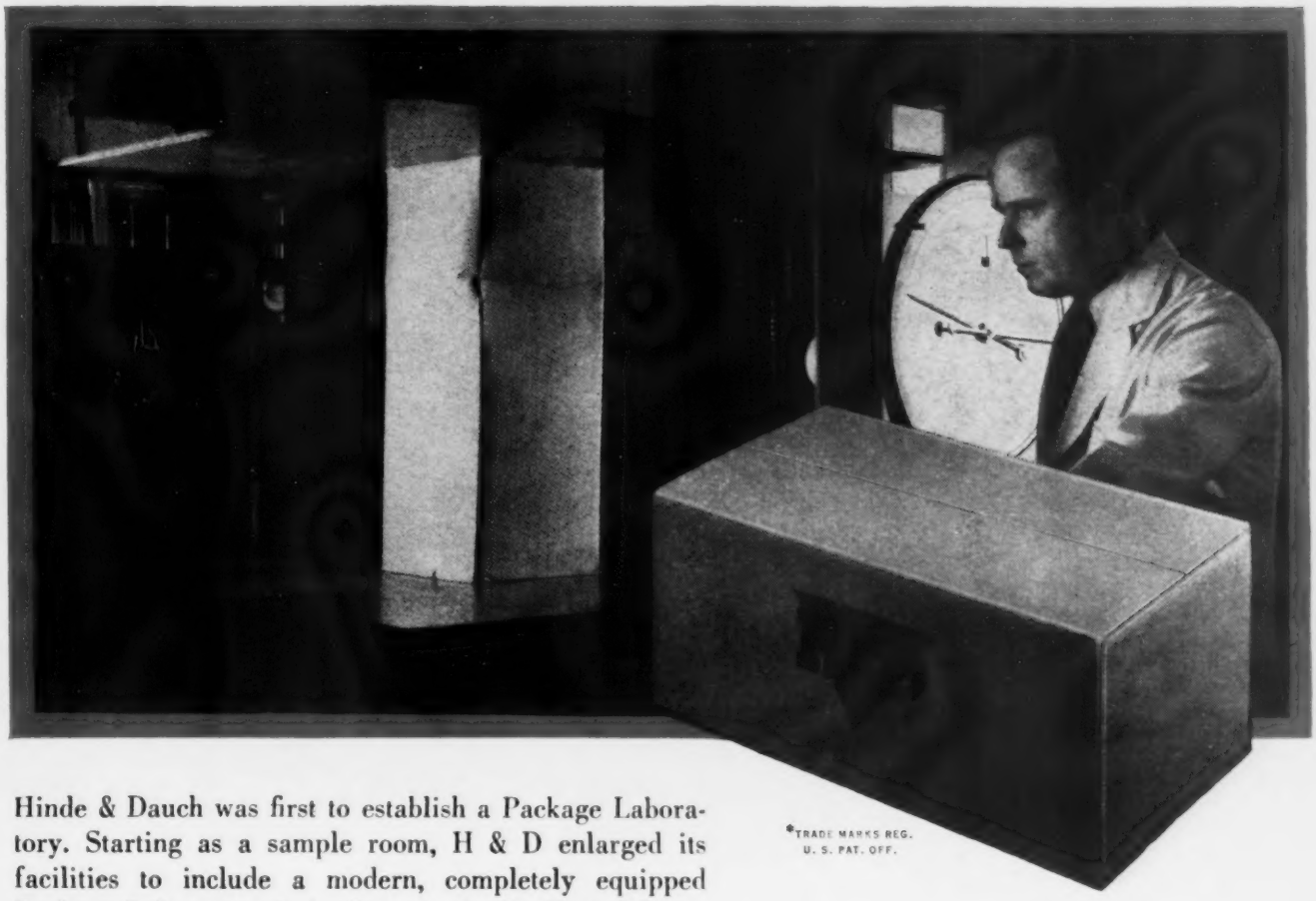
Canadian Representatives United Steel Corporation Ltd. of Canada, Toronto

first to establish a PACKAGE LABORATORY



Hinde & Dauch was first to establish a Package Laboratory. Starting as a sample room, H & D enlarged its facilities to include a modern, completely equipped Package Laboratory in its factories in the United States and Canada. From the Package Laboratory came the LIFE PRESERVER*, the first baby chick shipping box; the first corrugated box for shipping canned foods; PRE-PAK*, the first unit package. These and many other H & D "firsts" were developed in the Package Laboratory where scientific construction and design are employed to increase packaging efficiency and reduce packaging costs. The Hinde & Dauch Paper Company, 4701 Decatur Street, Sandusky, Ohio.

*TRADE MARKS REG. U. S. PAT. OFF.

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YES!
YOU CAN MEET
THE DEMAND FOR

IMPROVED

STAIN RESISTANCE

WATER REPELLENCE

WITH

PARAMUL 115

A Cyanamid Textile Finish for

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RAYON

LINEN

WOOLENS

PARAMUL** 115 Water Repellent is an aqueous solution of wax and aluminum salts that imparts superior water repellency and stain resistance to a wide variety of fabrics—cotton, rayon, linen and wool. It is equally suitable for treating such fabrics for outerwear or equipment purposes. Easy and economical to use. Odorless and harmless to skin or fabric. Stable over a wide range of temperatures, it can be stored safely for long periods of time. In its ability to meet a specific need precisely, PARAMUL 115 is typical of the many Cyanamid products developed for use in the textile industry.

CALL CYANAMID! The services of Cyanamid's technical service staff backed by our extensive textile research facilities are ready to assist you to achieve superior results . . . *economically* . . . in water repellence and stain resistance for your fabrics.

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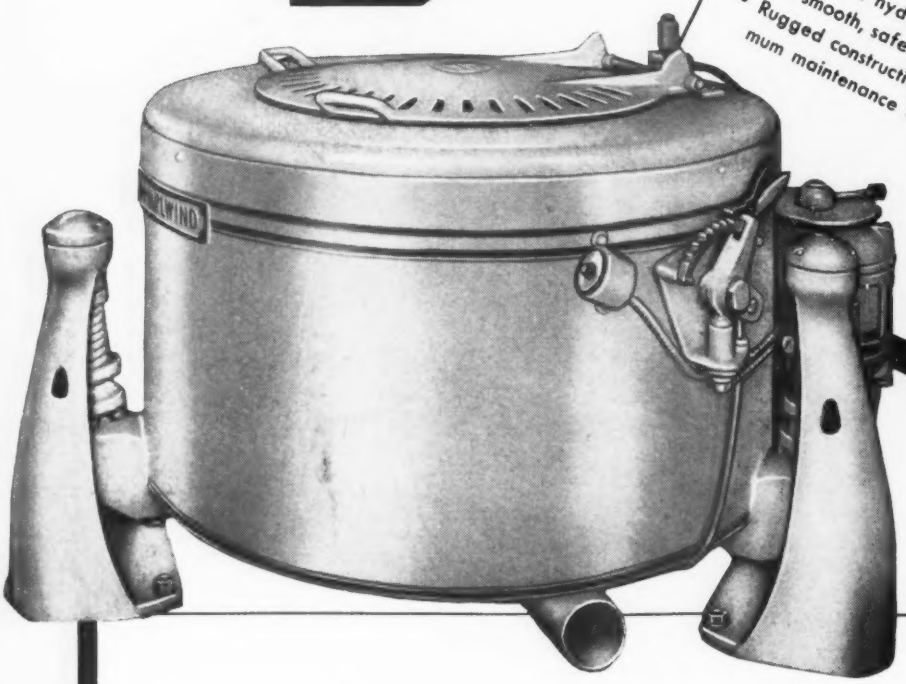
FLETCHER WHIRLWIND EXTRACTOR



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- Rugged construction to take hard service with minimum maintenance and repair

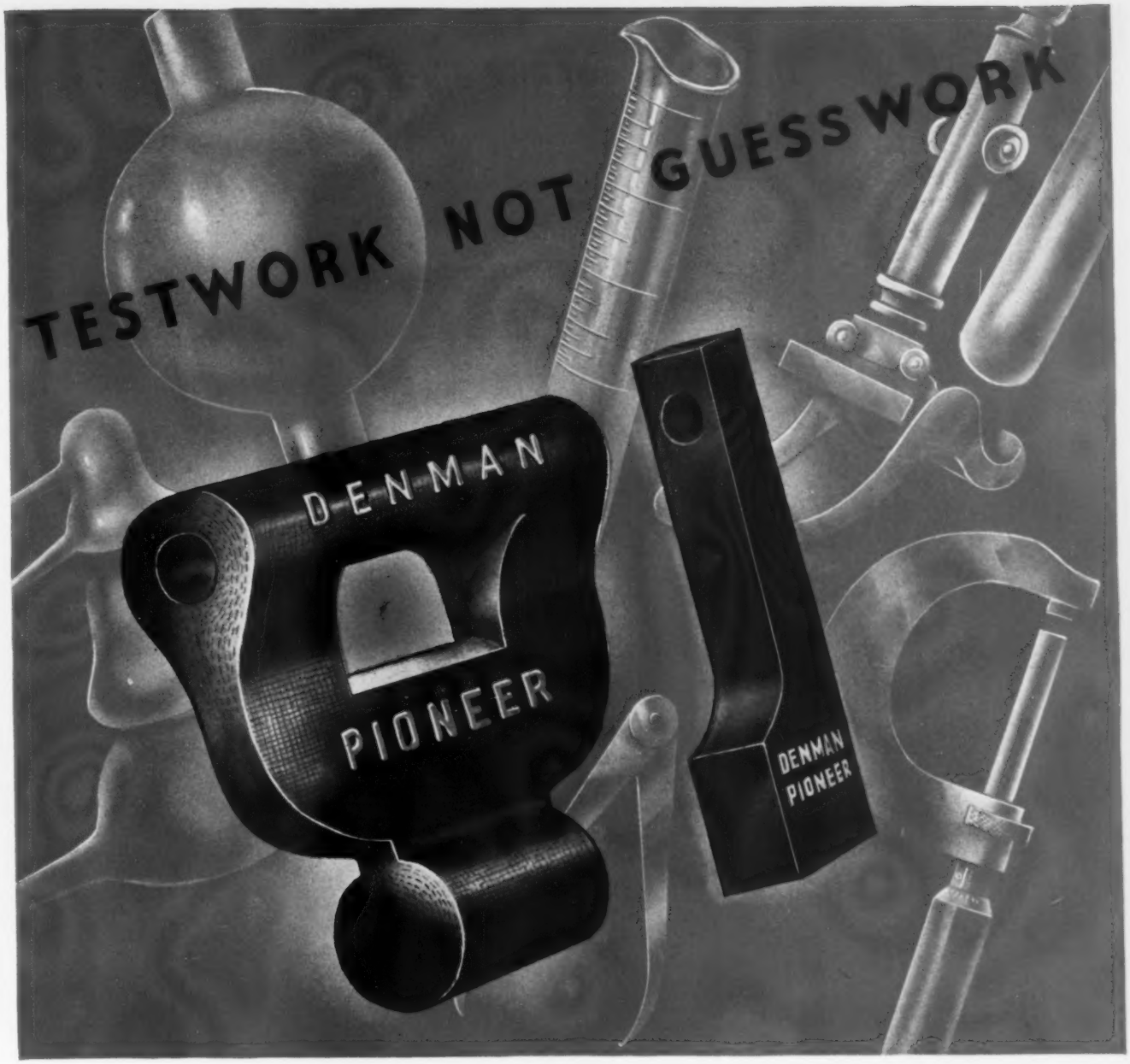
These features explain why Fletcher owners, all over the country, express complete satisfaction with these precision-built machines.

Just wait until you've used a Fletcher Whirlwind Extractor . . . learned how it whirls out the work . . . watched its smooth acceleration, its high running speed, its even, safe braking and its easy loading and unloading. Noted its rugged, sturdy construction . . . gotten acquainted with its dependable, trouble-free, time- and labor-saving operation and its ready answer to your demand for fast, safe thorough extraction.

Remember, it pays to investigate before investing in an extractor . . . so why not write for our catalog, today. Engineering consultation is available without obligation.

FLETCHER WORKS

223 GLENWOOD AVE. PHILADELPHIA 40, PA. ESTABLISHED - 1850



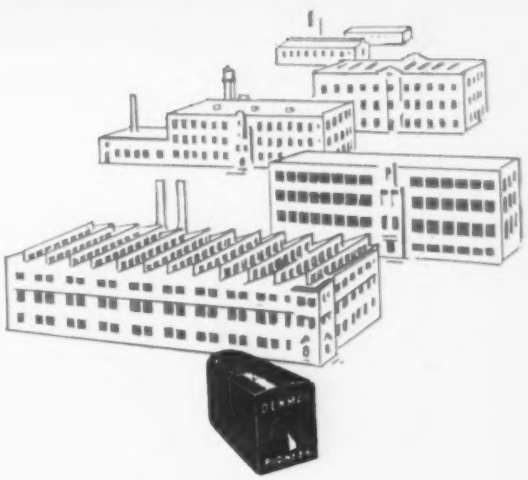
Through a decade, pioneering field knowledge applied to laboratory research have combined to set a record for Denman . . . .

Lowest Cost Per Loom Per Year.

Terrell field men are on the job, watching the new, higher speed postwar looms, where pickers must take even greater punishment.

Pioneering, studying, testing, and improving have led the industry to look to Denman for the best. By these same methods Denman will meet new challenges

TO BRING YOU THE BEST . . . FIRST!



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The TERRELL COMPANY, Inc.

CHARLOTTE, N. C.

"NO CALENDER CAN BE BETTER THAN THE ROLLS IN IT"

B. F. PERKINS & SON, Inc.

ENGINEERS AND MANUFACTURERS

HOLYOKE, MASS.

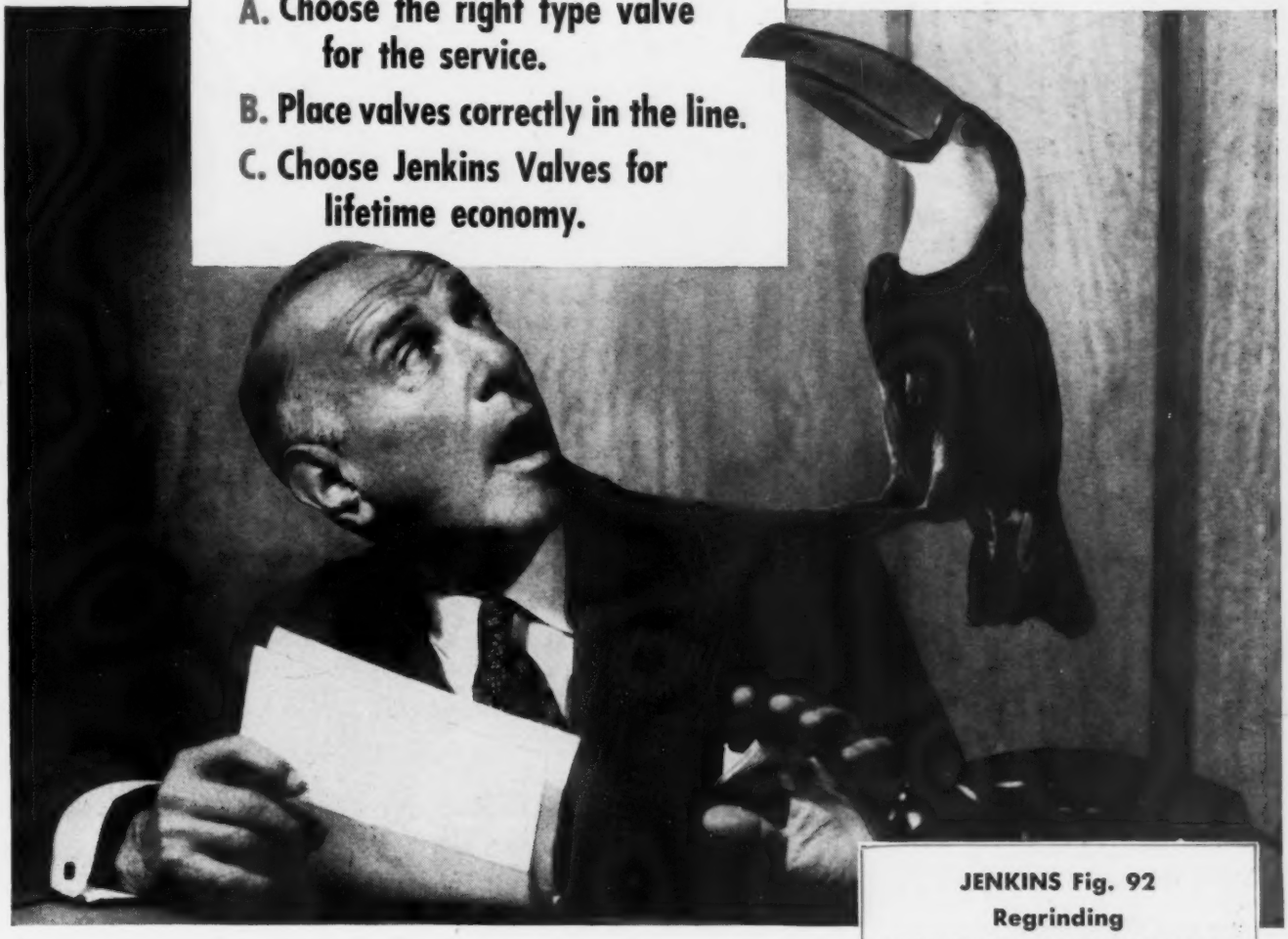
LARGEST MANUFACTURERS OF CALENDER ROLLS IN THE WORLD

It's Simple to avoid a Big Bill for valve upkeep!

A. Choose the right type valve for the service.

B. Place valves correctly in the line.

C. Choose Jenkins Valves for lifetime economy.



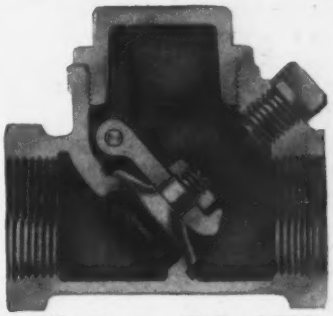
THESE three, simple, basic rules, plus intelligent treatment and care of valves, are paying extra dividends in valve economy to more and more valve users in every industry.

By choosing Jenkins Valves, you get not only valves made with extra endurance that means extra economy, but also expert advice of top-rated valve specialists, Jenkins engineers, on any question of valve selection or placement for any service.

Base your valve buying on this ABC formula for *lowest cost in the long run.*

Jenkins Bros., 80 White Street, New York 13; Bridgeport; Atlanta; Boston; Philadelphia; Chicago; San Francisco. Jenkins Bros., Ltd., Montreal.

JENKINS Fig. 92
Regrinding
BRONZE SWING CHECK VALVE



125 lbs. Steam 250 lbs. O.W.G.

Designed for service on non-return control systems; especially with Gate Valves, where a comparable full, free flow of steam, oil, water, or gas is required. It is also widely used for condensate and return lines. The high tensile bronze disc is carefully machined to a smooth, tight-fitting finish, can be reground easily without removing valve from line.

ONE OF OVER 600 *EXTRA VALUE* VALVES MADE BY JENKINS *VALVE SPECIALISTS*

LOOK FOR THIS DIAMOND MARK

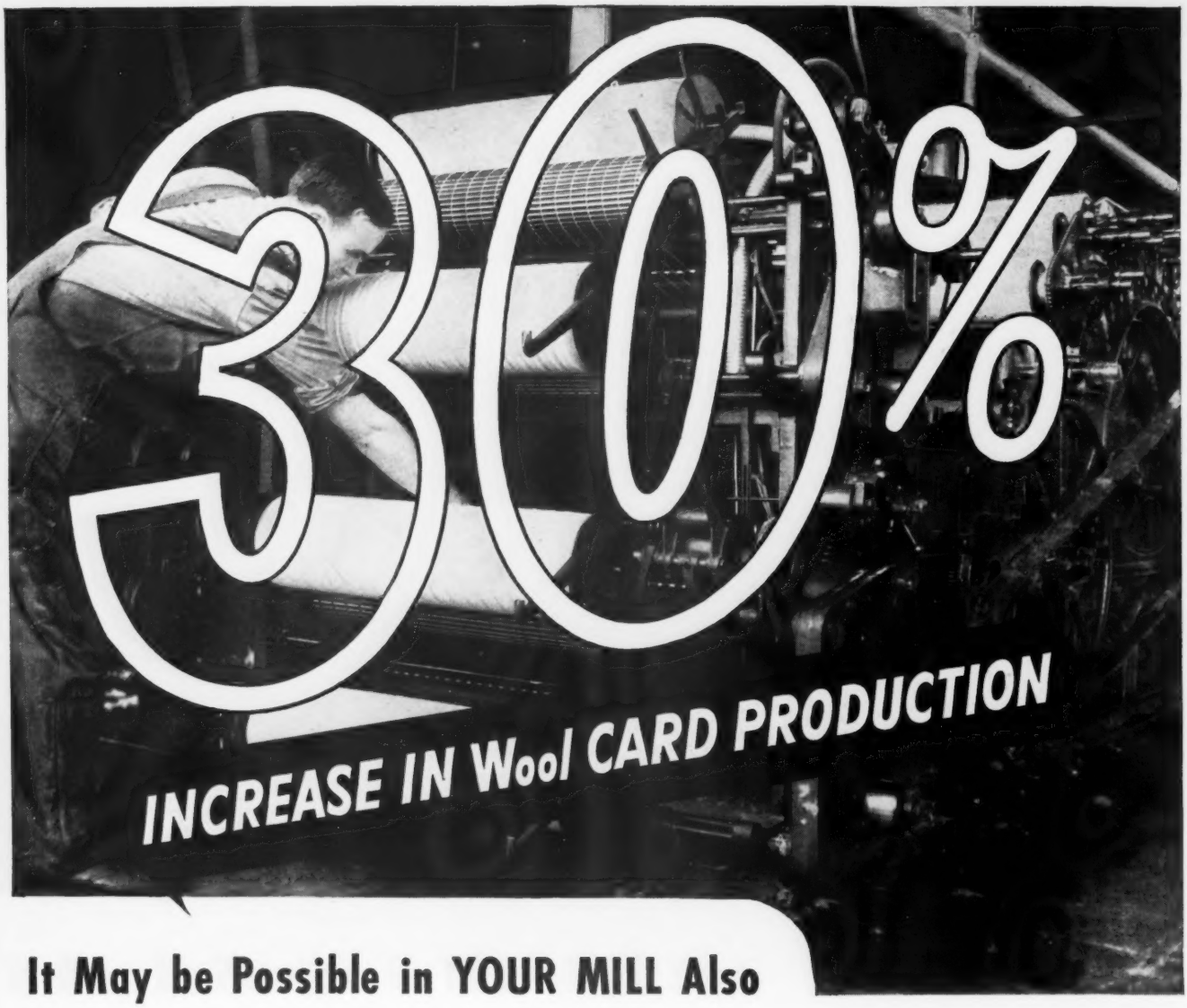
SINCE 1864

Jenkins Bros.

JENKINS VALVES

Types, Sizes, Pressures, Metals for Every Need

Sold Through Reliable Industrial Distributors Everywhere



It May be Possible in YOUR MILL Also

During the war a number of our customers in the woolen and worsted industry were so desperately in need of more production that they did something they had never done before. They asked us to inspect their card clothing and cards with a view to improving both the quality and the quantity of the output.

Inspection by one of our practical card men revealed that several mills were using the wrong type of clothing for the job or that the card setting was incorrect for the best results. When our recommendations were adopted, production increased as much as 30% in some cases and the quality of the sliver was greatly improved resulting in better yarns, better fabrics and economies all along the line.

Inspection of cards is only one of hundreds of problems which you and your employees have to think about. We pay a man to do and think of nothing else. It is only logical that he should be able to save many mills time and money and to improve the quality of their carding.

He will be glad to call on you by appointment and to inspect your cards free of charge

PRODUCTS AND SERVICES

Card Clothing For Cotton, Wool, Worsted, Silk, Rayon And Asbestos Cards And For All Types Of Napping Machinery · Brusher Clothing And Card Clothing For Special Purposes · Lickerin Wire And Garnet Wire · Sole Distributors For Platt's Metallic Wire Lickerins And Top Flats Reclothed

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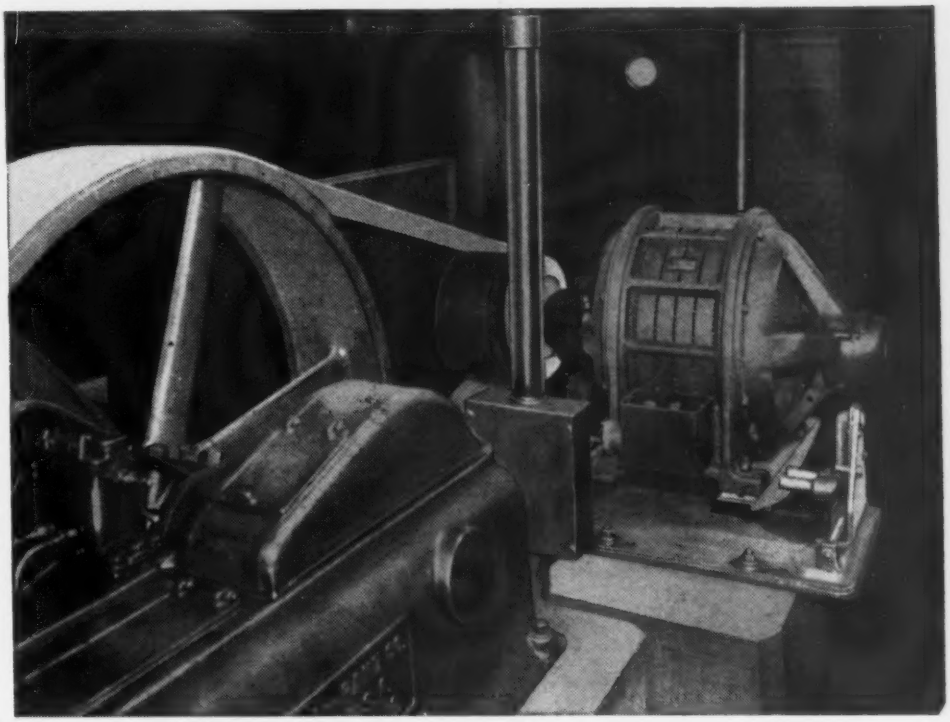
Fall River*†‡ Worcester*‡ Philadelphia*†‡
Atlanta†‡ Greenville†‡ Charlotte†‡
Dallas†‡ (Textile Supply Co.)
*Factory †Repair Shop ‡Distributing Point

3 FACTORIES · · · 6 REPAIR SHOPS · · · 7 DISTRIBUTING POINTS

How much IS BELT SLIP COSTING You?



This is a typical installation of an American Econ-o-matic Drive operating on an air compressor. Since its installation in 1939 there has been no trouble with belts slipping or burning, and belt life is at least three times longer than that of former drive.

● Regardless of how efficient the valves, pistons and other working parts of an air compressor operate, it is impossible to get rated capacity from the unit unless it is driven at the *proper speed*. To get this proper speed means that not only the drive ratio will have to be right but *belt slip will have to be eliminated.*

Correct drive ratios can be easily computed. Belt slip can be easily eliminated by using American Econ-o-matic Drives.

American Econ-o-matic Drives eliminate belt slip because they automatically match the belt-tension to the load on the motor. When the load increases, the belts are automatically and instantly tightened to eliminate slip. When the load decreases, belt-tension is decreased—thus reducing wear on both belts and bearings.

Whether or not you operate compressors, Econ-o-matic Drives will give your flat or V-belt, short-center driven equipment the advantages of increased output, longer wear and reduced maintenance. Write today for more information on American Econ-o-matic Drives.

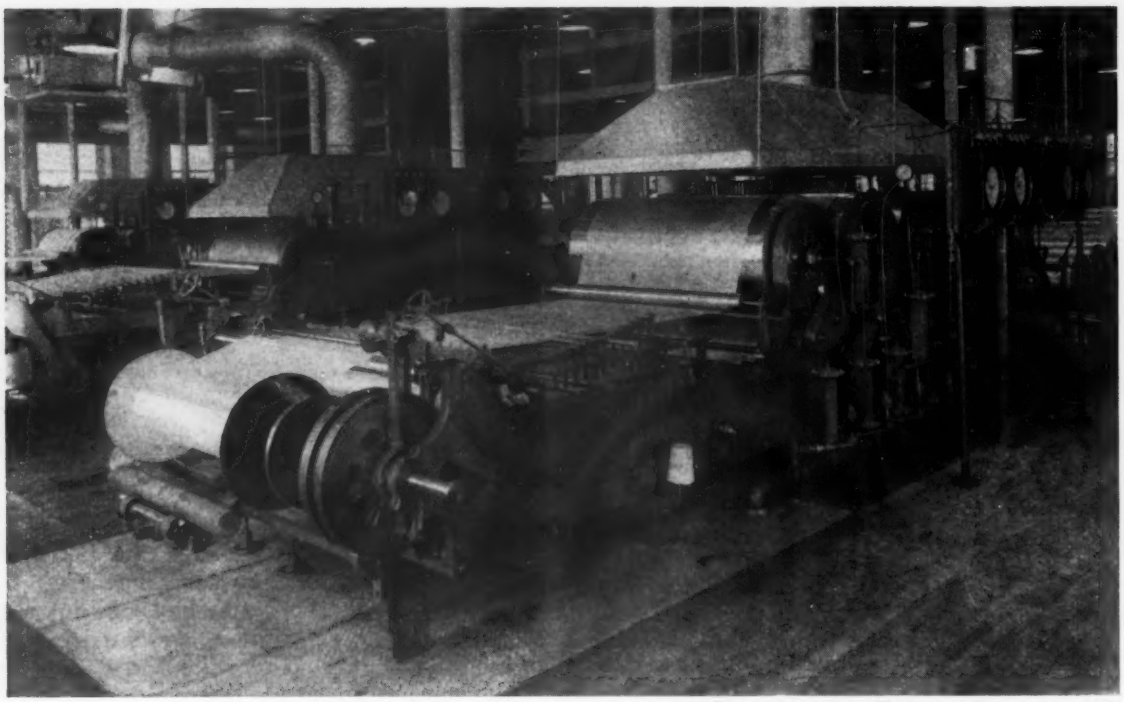
The American Pulley Company

4258 WISSAHICKON AVE., PHILADELPHIA 29, PA.

Best by every test

in the mills whose opinion is based
on quality and efficient performance.

JOHNSON WARP SIZER



Johnson Sizer installation at Waumbec Mills

Developed in cooperation with the manufacturers and users of fine yarns.

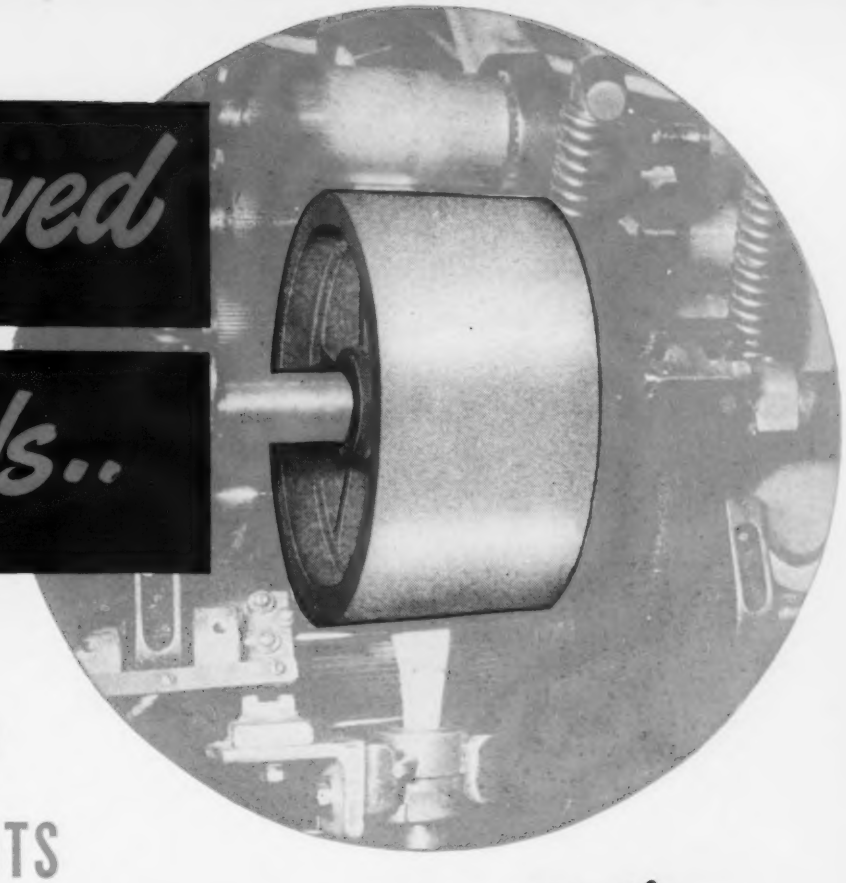
Used wherever quality and quantity of production are every day requirements.

Manufactured by

Charles B. Johnson MACHINE WORKS

PATERSON **NEW JERSEY**

Mill-Proved Records..



show that DAYCO WOOLEN and WORSTED COTS outlast other types of cots *over 12 times*

After years of service, Dayco cots retain their original coefficient of friction and resiliency . . . without a sign of grooving or other deterioration. They give this kind of record service because they are designed and engineered for their job . . . and because they are made of *specialized* rubber which is not affected by moisture, temperature extremes, or other adverse operating conditions.

It will pay you to write for complete information today.

THE DAYTON RUBBER MANUFACTURING COMPANY
Factory: Waynesville, N. C.
Main Sales Office: Woodside Building, Greenville, S. C.

Eight reasons why you should standardize on Dayco Woolen and Worsted Cots

1. Outlast others 12 times and more.
2. High yarn uniformity — less matching up.
3. Save time, labor in pressure adjustments after shutdowns.
4. Reduce power requirements.
5. Cut arbor applying time as much as 2/3.
6. Roll replacement cut to absolute minimum.
7. Any combination of wool, rayon, mohair run equally well.
8. Simplify production schedules.

Dayton Rubber

THE MARK OF TECHNICAL EXCELLENCE IN NATURAL AND SYNTHETIC RUBBER

FAMOUS *Dayco* SYNTHETIC RUBBER PRODUCTS SINCE 1934

Baa! Baa!.. Mrs. Sheep– Have you any wool?

Yes, sir! Yes, sir! 10 DIFFERENT KINDS!

AS every good wool and worsted mill man knows, the "three bags full" the sheep offered in the nursery rhyme were not an unmixed blessing.

Even when it is carefully sorted into half bloods, quarter bloods, 64's, etc., every bag of wool seems to have individual characteristics that may often complicate its processing.

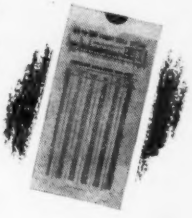
That's why woolen and worsted spinning remains almost as much an art as it is a science.

And that's why leading woolen mills enlist the experience of the Victor Service Engineer when it comes to a question of travelers for spinning or twisting.

The Victor Service Engineer is thoroughly mill-trained – a man who "talks your language" – and is fully equipped with information on handling any fiber. Mill men throughout the industry – who know the importance of the *right* traveler – have chosen Victor Travelers for over 8,000,000 spindles of spinning and twisting – ample proof that Victors pay off in performance.

Write, wire, or phone the nearest Victor office . . . for *prompt* service.

Wool Spinning Card Room Chart Free on request. Gives the approximate grain weight of travelers for front roll speeds 85 to 100 . . . also a Comparative Rayon Denier Yarn Table. Write for your copy today.

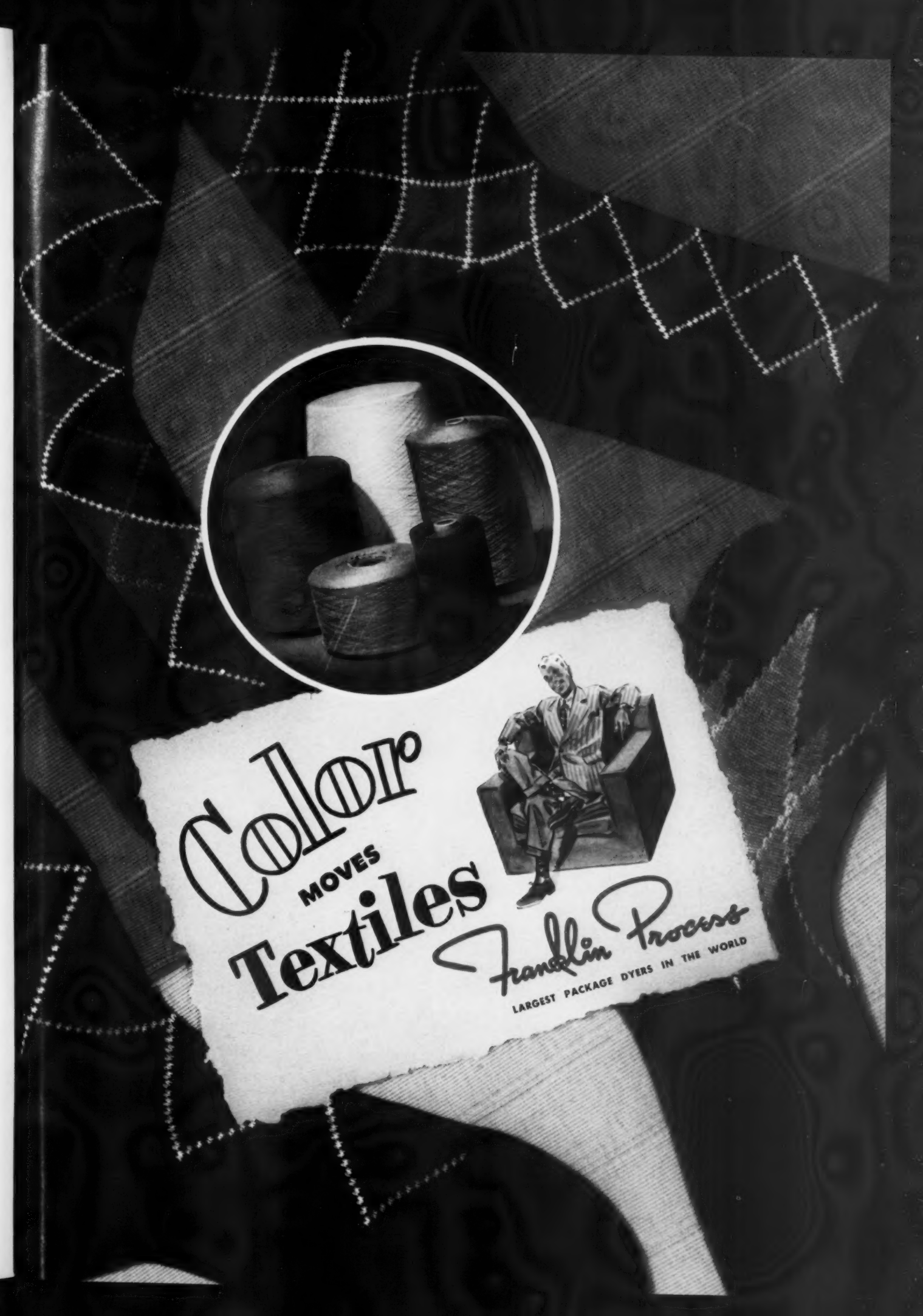


VICTOR Ring Travelers

Victor Ring Traveler Company

PROVIDENCE, R. I. — 20 Mathewson St. — Tel. Dexter 0737

GASTONIA, N. C. — 173 W. Franklin Ave. — Tel. 247

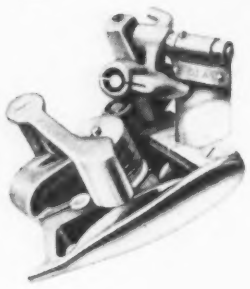

Color
MOVES
Textiles
Franklin Process
LARGEST PACKAGE DYERS IN THE WORLD

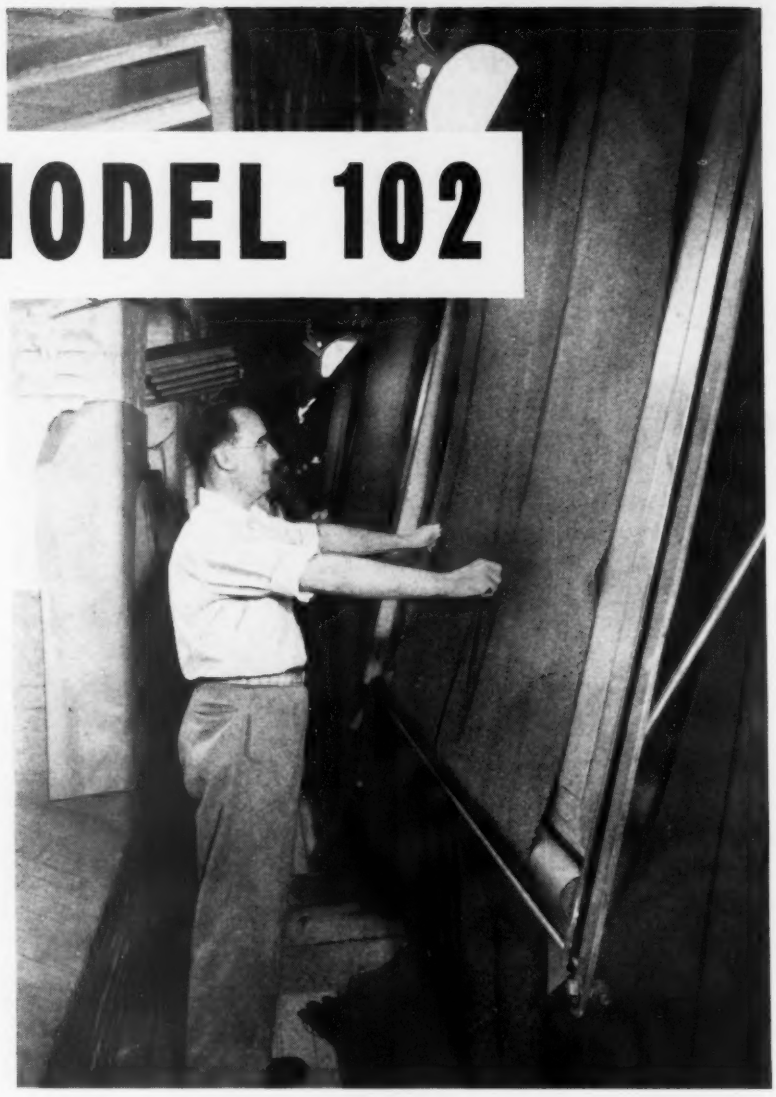
FOSTER MODEL 102

. . . for winding Worsted Yarns

•

. . . reduces cost of Burling and Mending





WHEN EQUIPPED with our Type 51A tension and slub catching device, the Foster Model 102 reduces burling and mending time in a woolen or worsted mill because it does such a thorough job of yarn cleaning.

The Type 51A attachment is particularly recommended for high grade yarns that must be free of all imperfections. It provides tension by means of a standard disc washer with felt shock absorber. From this tension the yarn goes into a groove in a hardened steel plate, which prevents a slub from flattening, coming out of the groove under the gate which can be adjusted close enough to break out any slubs or other imperfections, however slight. The gate sits at an angle to the yarn path, so that the nits removed from the yarn do not clog it.

Its ability to produce an exceptionally clean, high quality yarn is only one of many features which recommend the Foster 102. Other equally important features are flexibility, greatly increased production and low maintenance and repair costs. The Model 102 can be equipped to wind a 6″ or 7″ traverse, any taper; angle of wind can be varied from 9° to 18° by changing 4 small gears. Sturdy construction reduces vibration and wear so that repair costs run as low as $3.50 per year per 100 spindle machine. Any competent mechanic can make adjustments. Production is double that obtainable from obsolete machines, with a reduction in operating costs of 1/3.

Tell us your winding problem and let us make recommendations.

Model 102

FOSTER MACHINE CO.

WESTFIELD, MASSACHUSETTS

Southern Office: **JOHNSTON BUILDING, CHARLOTTE, NORTH CAROLINA**

Canadian Representative: **ROSS, WHITEHEAD & COMPANY, LIMITED**
UNIVERSITY TOWER BUILDING, 660 STE. CATHERINE STREET WEST, MONTREAL, QUEBEC.

CROUSE-HINDS

50th Anniversary

HALF A CENTURY OF ACHIEVEMENT

1897 Fifty years ago two men each had an idea. Huntington B. Crouse had an idea. He wanted to be a business man. Jesse L. Hinds had an idea. He wanted to manufacture articles for the electrical trade. A mutual friend brought the two men and their ideas together and on January 18, 1897 the Crouse-Hinds Electric Company was born. It manufactured electrical switches, panelboards, switchboards, and the patented Syracuse Changeable Electric Headlight for trolley cars. The headlight was the forerunner of the extensive line of lighting equipment manufactured later.

1903 The partnership was replaced by a corporation — Crouse-Hinds Company.

1906 A newly invented line of electrical conduit outlet bodies with threaded hubs was now manufactured. A new name was needed, so the word "CONDULET" was coined. It was adopted as a trade mark and registered in the United States Patent Office. Condulets were destined to revolutionize electrical conduit installation practice.

1910 Mr. Crouse formulated a firm policy of equal discounts to all distributors and equal prices to other purchasers. Revolutionary in those days, it has since been generally adopted by the electrical industry.

1911 On a 25-acre plot of land the cornerstone of the present plant was laid. Additional acres and buildings have been added since.

1915 Crouse-Hinds made the first of its now extensive line of floodlights.

1922 Crouse-Hinds built the first modern four-way three-section traffic signal.

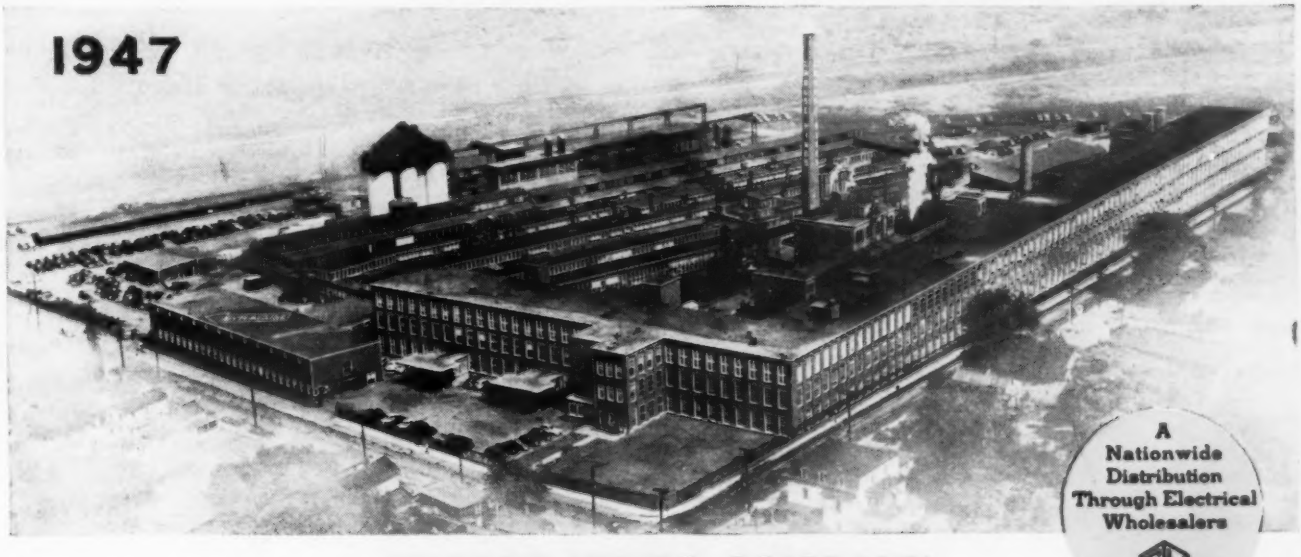
1927 Crouse-Hinds developed equipment especially designed for airport lighting.

1929 Pioneer in sports lighting, Crouse-Hinds installed a complete lighting system in a major college football stadium — at Syracuse University.

1932 Crouse-Hinds issued the first complete catalog of a line of Explosion-Proof Condulets.

1943 Upon the death of Mr. Huntington B. Crouse, Mr. William L. Hinds succeeded him as President of Crouse-Hinds Company.

1947 Now, after fifty years, the Crouse-Hinds Company has the same objectives with which it started — to make a good product better and to deal fairly and honestly with all.



A Nationwide Distribution Through Electrical Wholesalers

CROUSE-HINDS COMPANY

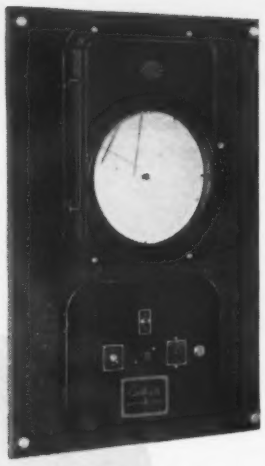
Syracuse 1, N. Y., U.S.A.

Offices: Birmingham — Boston — Buffalo — Chicago — Cincinnati — Cleveland — Dallas — Denver — Detroit — Houston — Indianapolis — Kansas City — Los Angeles — Milwaukee — Minneapolis — New York — Philadelphia — Pittsburgh — Portland, Ore. — San Francisco — Seattle — St. Louis — Washington. *Resident Representatives:* Albany — Atlanta — Charlotte — New Orleans

CROUSE-HINDS COMPANY OF CANADA, LTD., *Main Office and Plant:* TORONTO, ONT

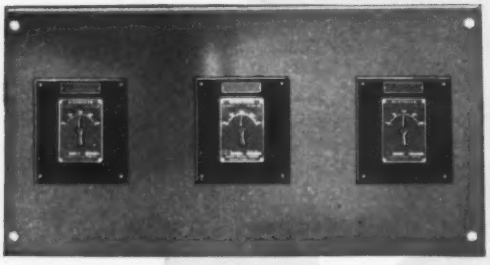
CONDULETS • TRAFFIC SIGNALS • AIRPORT LIGHTING • FLOODLIGHTS

ELECTRONIC
MOISTURE CONTENT CONTROLLER



COMBINATION SIZE LEVEL AND
SIZE BOX CONTROL

"TEMCHRON" TIME, TEMPERATURE,
AND CYCLE CONTROL
FOR SIZE COOKING



CYLINDER TEMPERATURE CONTROL PANEL
FOR MULTIPLE-CYLINDER SLASHERS

COMPLETE SLASHER CONTROLS *by* BARBER-COLMAN

AUTOMATIC SIZE LEVEL CONTROL

All functions of slasher operation are accurately controlled by rugged, dependable units of Barber-Colman automatic electric controls — designed and manufactured by Barber-Colman Company whose engineering, laboratory, and production facilities have served the textile industry for more than forty-five years. Call or write your nearest Barber-Colman branch office for engineering assistance.

TEMPERATURE AND HUMIDITY CONTROLS

Barber-Colman field engineers will also be glad to advise you in the selection of automatic electric temperature and humidity control equipment for heating, ventilating, and air conditioning systems throughout the textile mill.

Write for these Booklets

Barber-Colman Company

45 YEARS EXPERIENCE SERVING TEXTILE MILLS

ROCKFORD ILLINOIS · BOSTON MASSACHUSETTS · GREENVILLE SOUTH CAROLINA · GREENSBORO NORTH CAROLINA · ATLANTA GEORGIA

What's she got that I haven't got?

It's the plus of Johnson's DRAX*

*Trademark Reg. U. S. Pat. Off.

— a protective wax finish for all woolens, cottons, linens, rayons and mixtures.

DRAX improves the hand and drape of all fabrics

DRAX protects the freshness of all types of fabrics

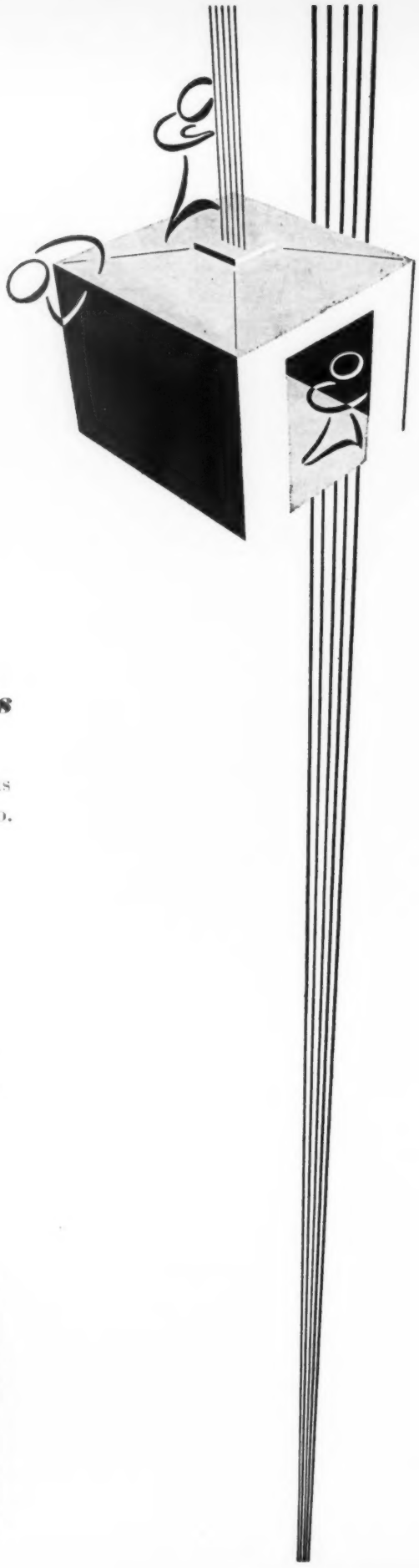
DRAX helps safeguard fabrics against soiling

DRAX increases resistance to wear

DRAX is being applied successfully in padders, jigs, dolly washers, mangles, size boxes, dye reels, quetches, dye becks, dye kettles, package dye machines. Remains completely stable during storage. May be applied at temperatures from 70° to 200° F.

DRAX *has been developed for the Textile Industry by the makers of Johnson's Wax. For complete technical information about DRAX — write to* **S. C. JOHNSON & SON, Inc.**

Fabric Finishes Division, Racine, Wisconsin



clock stopper

Otis *maintenance*
for Otis *elevators*

Ordinarily, you would expect elevator maintenance costs to increase as equipment grows older. Ordinarily they do.

But not so with Otis Maintenance. For this is not an ordinary service. It is complete maintenance by a manufacturer who has demonstrated that properly maintained elevator equipment is unaffected by age.

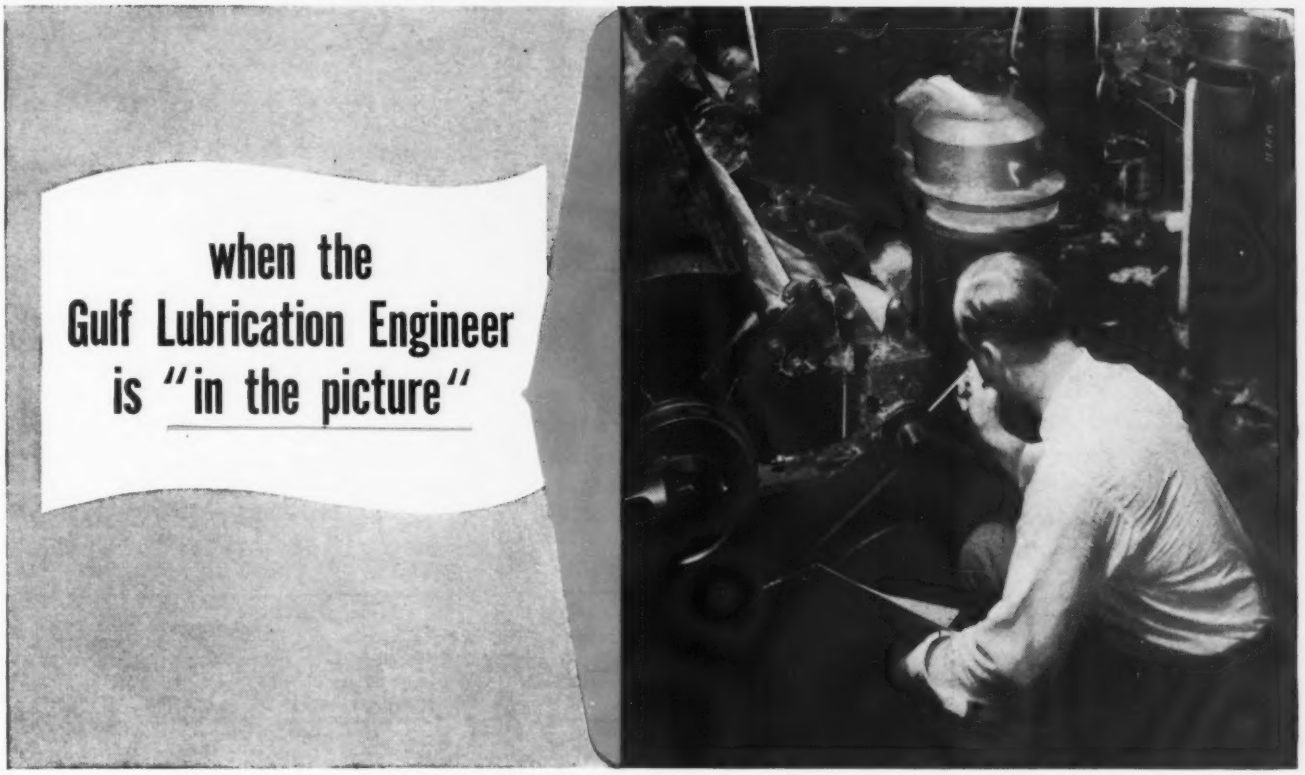
Otis Maintenance rates are adjusted every *five* years in accordance with prevailing costs of labor and material. They are never increased due to age of the equipment. If your elevator is new when placed in our care, the rate continues as on a "new" elevator for the duration of the contract.

Every Otis Maintenance contract increases in value to the building owner as time goes on. Therefore, the sooner you start . . . the more you save.

Otis
ELEVATOR COMPANY
OFFICES IN ALL PRINCIPAL CITIES

❊Less comb-box wear

❊Lower maintenance costs



This Gulf Lubrication Engineer, shown checking comb-box temperatures, is "in the picture" in a number of leading mills, where he helps to improve efficiency and reduce costs.

DO you frequently have comb-box lubrication troubles? Scores of leading mills insure against overheating, excessive wear, and leakage in these important units by keeping a Gulf Lubrication Engineer "in the picture."

Gulf Lubrication Engineers recommend the proper application of the right oils or greases for every moving textile machine part — then cooperate closely with mill operating and maintenance men to keep lubrication on a sound, scientific basis the year-round. Result: less machine down time, greater yardage, and lower power and maintenance costs.

Call in a Gulf Lubrication Engineer today and let his knowledge and experience assist you in solving your lubrication and maintenance problems. Write, wire, or phone your nearest Gulf office.

Gulf Oil Corporation · Gulf Refining Company

Division Sales Offices:

Boston · New York · Philadelphia · Pittsburgh · Atlanta
New Orleans · Houston · Louisville · Toledo

GULF INDUSTRIAL LUBRICATION

OVER 1,000,000

MEADOWS PRECISION BALL BEARING APPLICATIONS

HAVE BEEN USED

IN THE PAST FOURTEEN YEARS

•

OVER

4,000,000

spindles are now maintained at uniform speed with MEADOWS Precision Ball Bearing Tension Pulleys

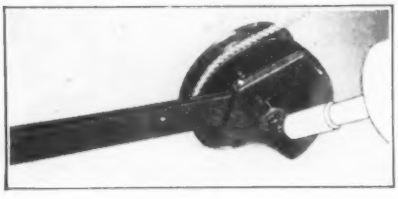
Representatives

JAMES P. COLEMAN,
P. O. Box 1351, Greenville, S. C.

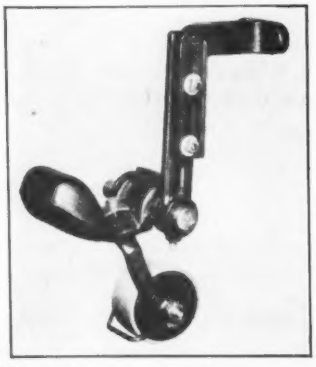
WALTER S. COLEMAN,
P. O. Box 722, Salisbury, N. C.

MATTHEWS EQUIPMENT CO.,
93-A Broadway, Providence, R. I.

4-Spindle Band Drive



Tape Drive—Twisting



Tape Drive—Spinning

MEADOWS MANUFACTURING CO. · ATLANTA, GA.

STOPS STATIC INSTANTANEOUSLY! SAFELY!

The CHAPMAN Electric Neutralizer

For years, the problem of static in textile mills was costly, time-devouring, constantly troublesome. Static slows down production, spoils work, frays operators' nerves. Humidity control, to a certain extent correct for regain and some other objectives, is not the answer for static. And EXCESSIVE humidity is objectionable and expensive.

IN THOUSANDS OF MILLS—EVERYWHERE,

CHAPMAN Neutralizers are eliminating static with complete safety, comfortably, and at low cost. A great percentage of woolen mills in this country and other countries use the CHAPMAN Neutralizer: 1) on the condensers of wool carding sets; 2) over doffer combs; 3) on Peralta machines; 4) on nappers; 5) on dryers; and on other machines. Worsted mills use the CHAPMAN Neutralizer on cards, and on the worsted drawing process. Where the cotton system is employed in making blended yarns containing wool, acetate rayon, and other synthetics, or in making wool yarns, mills use the CHAPMAN Neutralizer to eliminate static created during the drawing process and with doffing. For many years CHAPMAN has been furnishing its equipment to mills for use on drawing frames of all makes, for all past and present makes of American cards, and most of the British cards. The CHAPMAN Neutralizer is virtually becoming standard equipment for high speed warpers and slashers.

WITH COMPLETE SAFETY

1. The CHAPMAN Neutralizer is absolutely safe.
2. No harmful rays are produced or emanate from it.
3. No shielding is necessary.
4. There is no possibility of immediate or future harmful effects to operators.
5. No state or other government objects to its use.
6. CHAPMAN Neutralizers are tested and approved by the Underwriters' Laboratories.

COMFORTABLY

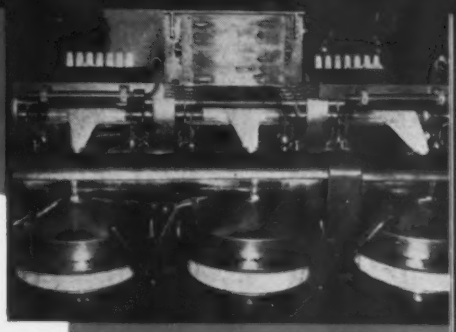
Excessive heat and humidity are not required when CHAPMAN Neutralizers are on the job. Operators work comfortably and, therefore, efficiently.

AT LOW COST

Cost of the small quantity of electrical energy used to operate any CHAPMAN installation is negligible. Savings are immediate in smooth production flow without static interference.

CHAPMAN'S experience through forty years in solving static problems in textile mills is available to you without obligation. Call upon CHAPMAN ENGINEERING SERVICE.

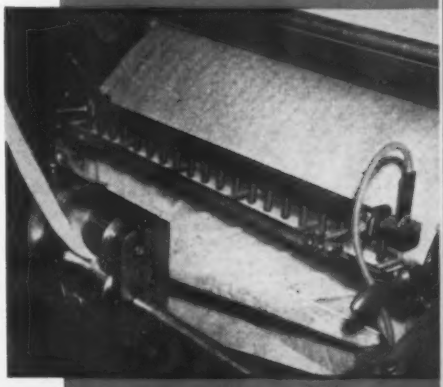
Write for your copy of the new Handbook of the Chapman Neutralizer, Bulletin No. 66.



Three slivers in a line of drawing—equipped with CHAPMAN Neutralizers. One clearer cover is raised.

Two lines of drawing, running blends containing wool, acetate rayon, etc. Equipped with CHAPMAN Neutralizers, insuring full production.

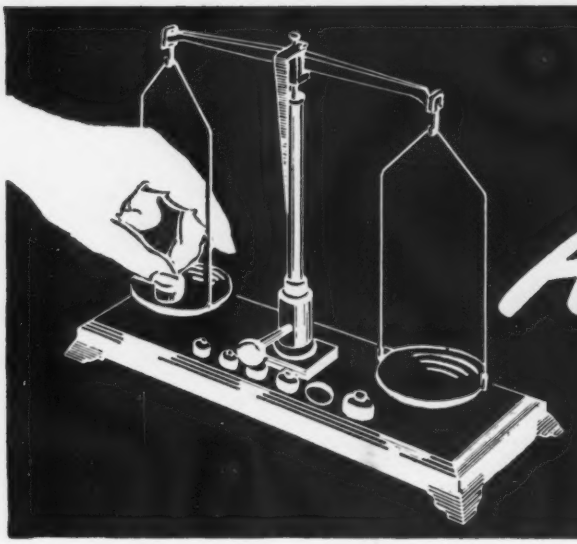
Line of Tape Condensers in a woolen mill, all equipped with CHAPMAN Neutralizers of the individual type.



A close-up view of a cotton card fitted with a CHAPMAN Neutralizer.

CHAPMAN ELECTRIC NEUTRALIZER COMPANY

ESTABLISHED 1904 PORTLAND, 6, MAINE



You've Got to Measure

ACCURATELY

to Get the Best Results!

For Accurate Salt Measurement

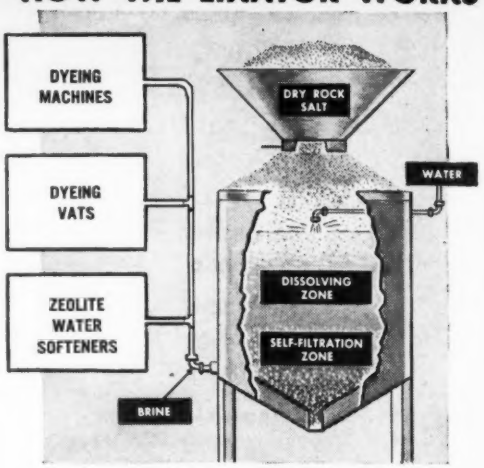
"PASS the SALT" BY LIXATOR

EVERY DYER knows that salt is a top-flight exhausting agent ... that it must be accurately measured to insure complete exhausting without waste ... and further that it must also be uniformly distributed in the dye bath to prevent spotting, streaking and white edges. The question is *how*.

With Lixate brine accurate salt measurement and uniform distribution are assured. For the Lixator automatically and continuously makes 100% saturated, crystal clear brine. Since each gallon of Lixate brine *always* contains 2.65 lbs. of salt—a definite volume of Lixate brine supplies a definite quantity of salt. The trouble and waste of measuring salt by hand or by mechanical devices, or of measuring by weight without regard to water absorption during storage, are things of the past. And added to the dye bath, salt, as brine, is immediately diluted and dispersed throughout.

Leading companies in your industry and many others are availing themselves of the Lixator's ability to measure salt accurately ... to reduce labor and handling costs and to improve the quality of their products. It will pay you to investigate the Lixate Process for making brine for your plant.

HOW THE LIXATOR WORKS



In the upper zone—Flowing through a bed of rock salt which is continuously replenished by gravity feed, water dissolves salt to form 100% saturated brine. **In the lower zone**—Through use of the self-filtration principle *originated by International*, the saturated brine is thoroughly filtered through a bed of undissolved rock salt. The rock salt itself filters the brine. Nothing else is needed.

WHAT THE LIXATOR PROVIDES

- ✔ **Chemical and bacterial purity to meet the most exacting standards for brine**
- ✔ **Unvarying salt content of 2.65 pounds per gallon of brine**
- ✔ **Crystal-clear brine**
- ✔ **Continuous supply of brine**
- ✔ **Automatic salt and water feed to Lixator**
- ✔ **Inexpensive, rapid distribution of brine to points of use by pump and piping**

Get the full story on why accurate salt measurement is *always* possible with Lixate brine. Send for your copy of our *free* pamphlet *today!*

INTERNATIONAL SALT COMPANY, INC., Dept. TW-2, Scranton, Pa.

Gentlemen:
Please mail absolutely free your pamphlet, "How Lixate Brine Solves the Problem of Accurate Salt Measurement."

Name _____

Firm _____

Street _____

City _____ *State* _____

The LIXATE Process
Reg. U. S. Pat. Off.
for making brine

INTERNATIONAL SALT COMPANY, INC.
Scranton, Pa.

NOW TWICE AS GOOD—

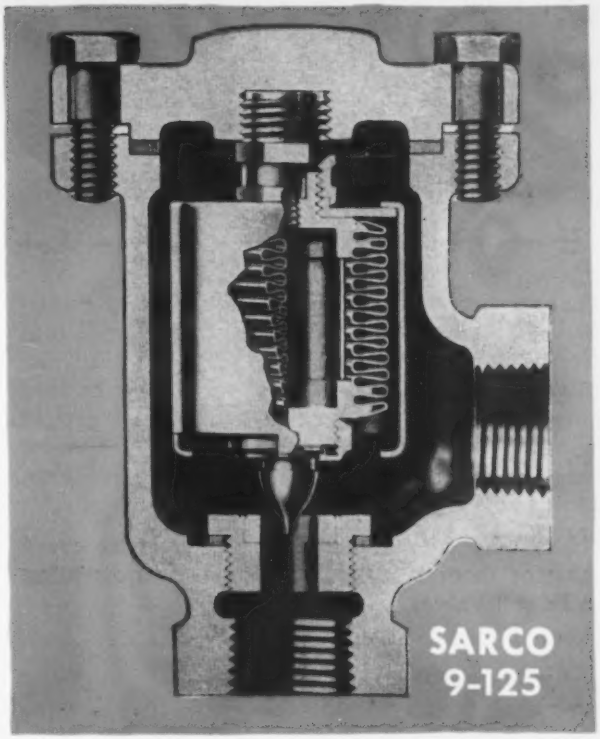
THE NEW SARCO THERMOSTATIC STEAM TRAP

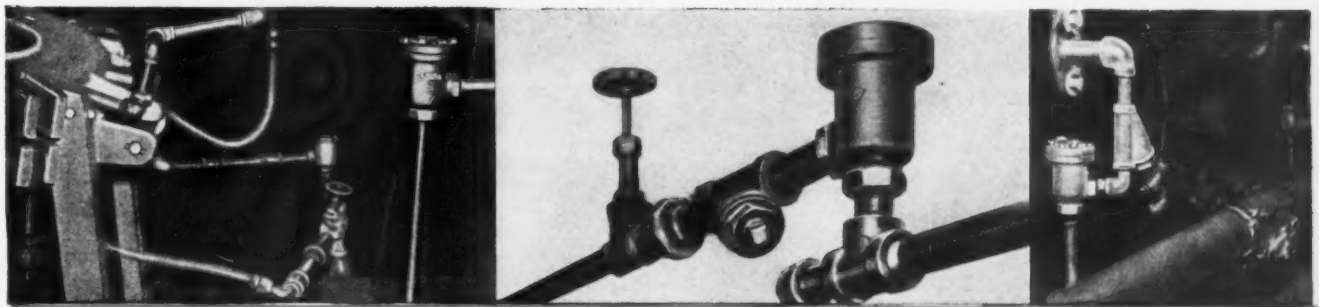
Whenever a better thermostatic steam trap is made, it will still be called "Sarco No. 9." The latest improvement, after years of development spurred on by the tremendously expanded use of this trap in the war effort, is now ready for you in the new 9-125 series.

No larger—not much change in appearance—but the valve orifices are larger and the capacity for discharge of *condensate* or *air* is doubled over the entire range of sizes.

HERE ARE SOME OF THE ADVANTAGES:

1. In process work, cooking time is governed more by air venting than trap capacity or speed. Actual output of cooking and similar equipment will be greatly increased.
2. The new No. 9 will operate almost as fast as a bucket trap—but have full capacity at condensate temperatures within 20 degrees of the steam. It is thermostatic trap efficiency with bucket trap capacities—a whole new field of applications for the No. 9.
3. Like other No. 9's, this trap is wide open when cold. It can't freeze. It requires no seat change when pressures change. It is small, inexpensive and easy to install.
   Ask for Bulletin No. 250.





181

SARCO SAVES STEAM

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For trouble-free flow control ....install POWELL Valves

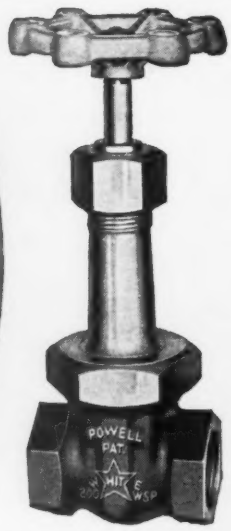

Fig. 375—200-pound Bronze Gate Valve with screwed ends, inside screw rising stem, union bonnet and renewable, wear-resisting "Powellium" nickel bronze disc.

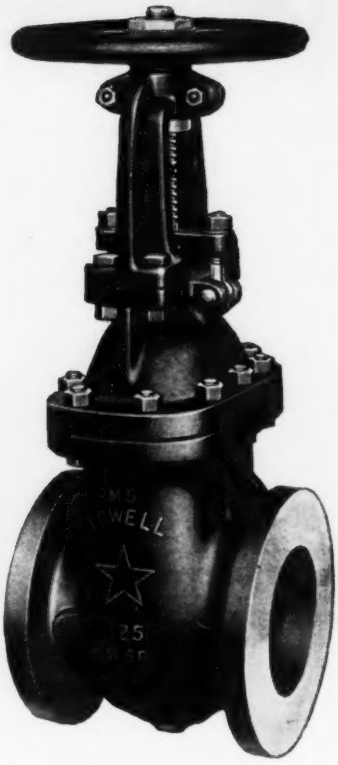

Fig. 1793—125-pound Iron Body Bronze Mounted Gate Valve with flanged ends, outside screw rising stem, bolted flanged yoke, bronze seat rings and taper wedge solid disc. Also available in All Iron.

There are at least two notable reasons why Powell Valves minimize flow control troubles. One is that every valve in the Powell Line has been scientifically designed to operate under certain specific flow control conditions—pressure, temperature and/or media. The other is that there's a Powell Valve for *every* operating condition, or set of conditions, known today.

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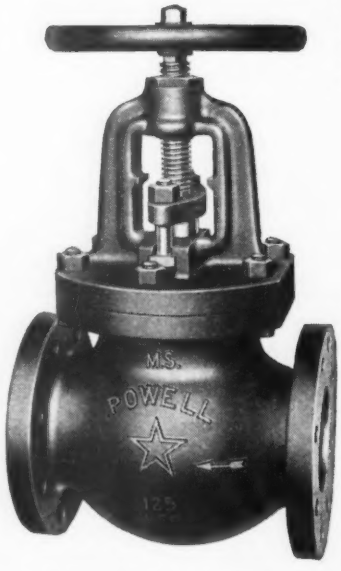

Fig. 241—125-pound Iron Body Bronze Mounted Globe Valve with flanged ends, outside screw rising stem, bolted flanged yoke and regrindable, renewable bronze seat and disc. Also available in All Iron for process lines.

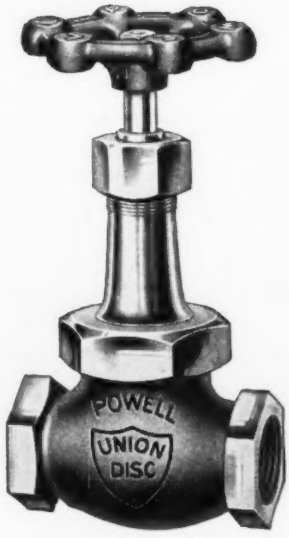

Fig. 150—150-pound Bronze Globe Valve with screwed ends, union bonnet and renewable composition disc.

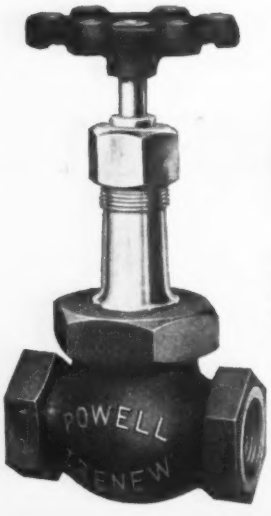

Fig. 190—150-pound Iron Body Bronze Mounted "Irenew" Globe Valve. Has screwed ends, union bonnet and regrindable, renewable wear-resisting "Powellium" nickel-bronze seat and disc.

Fig. 560—200-pound Bronze Regrinding Horizontal Swing Check Valve. Screwed ends, screwed-on cap and regrindable, renewable bronze disc.

The Wm. Powell Co., Cincinnati 22, Ohio

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8 POINTS of ADVANTAGE

are evident in the cross-section shown here:

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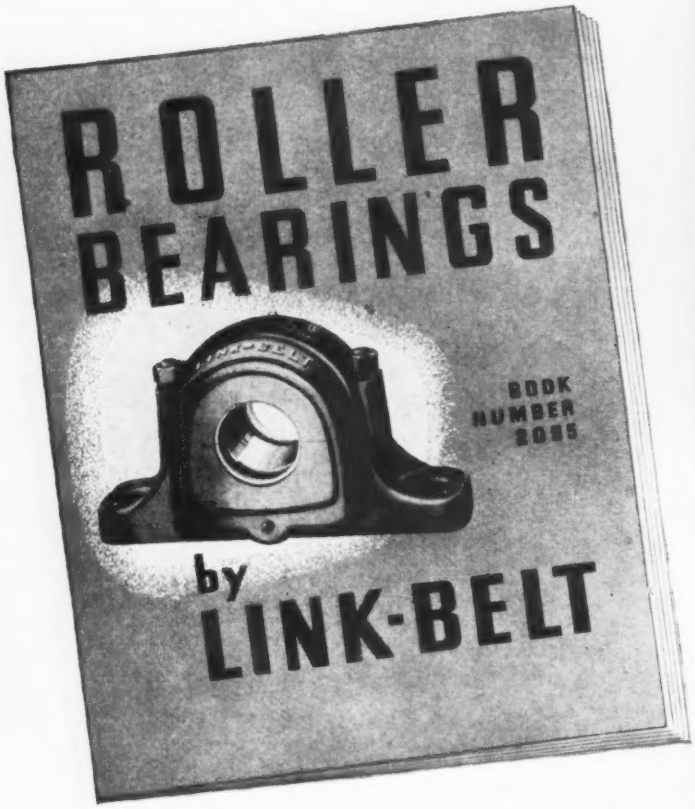
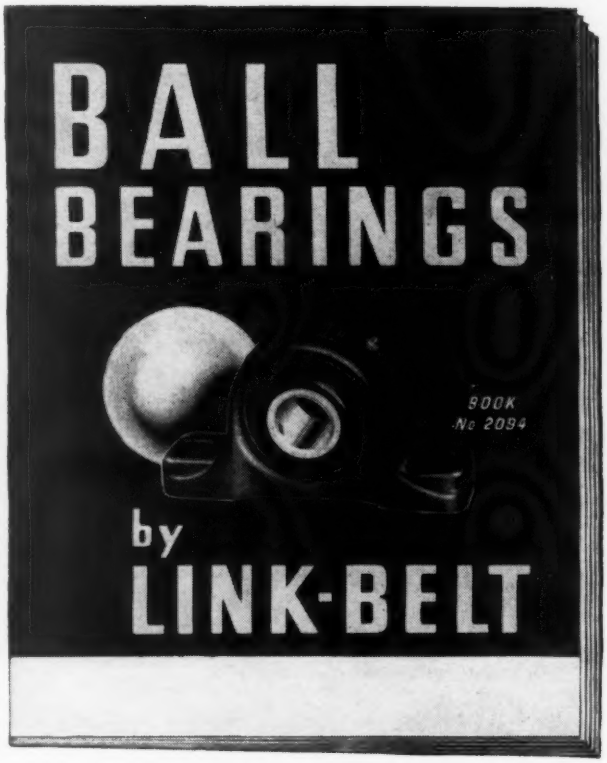


Book No. 2095 describes Link-Belt's line of Roller Bearing Self-Aligning Pillow Blocks of the adapter and press-fit-on-shaft types. Book contains engineering selection data and capacity tables and dimensions.



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Chicago 9, Indianapolis 6, Philadelphia 40, Atlanta, Dallas 1, Minneapolis 5, San Francisco 24, Los Angeles 33, Seattle 4, Toronto 8. Offices, Factory Branch Stores and Distributors in Principal Cities.

10,502

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A manual starter specifically designed for textile mill service—in Sizes 0 and 1

Reliable motor control is essential to effective textile mill operation. Every loom is needed to help offset present shortages. Evaluate the following features in terms of low installation expense, minimum maintenance and continued operation in YOUR mill.

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2. **Recessed handle** prevents damage caused by foot operation or accidental collision. Ridges in steel cover give additional handle protection.
3. **Protected type overloads** are suitable for grouping several motors on a single set of fuses, typical of loom installations.
4. **Porcelain base** is non-carbonizing—therefore ideal for humid locations. Contact chambers are deeply recessed to provide generous electrical clearances and exclude falling lint.
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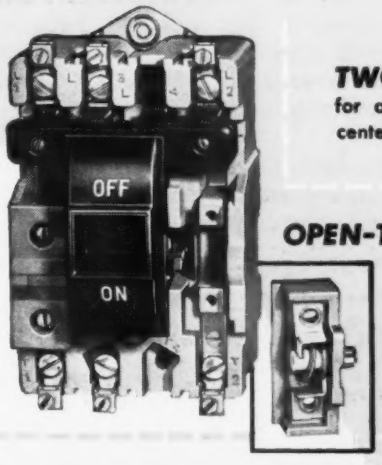

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OPEN-TYPE STARTER shows toggle operating mechanism, convenient terminals, deep porcelain base and 2-screw mounting strap. ***Insert:*** Melting alloy protected type overload relay, removed.

for complete information, write Square D Company, 4041 N. Richards Street, Milwaukee 12, Wis.

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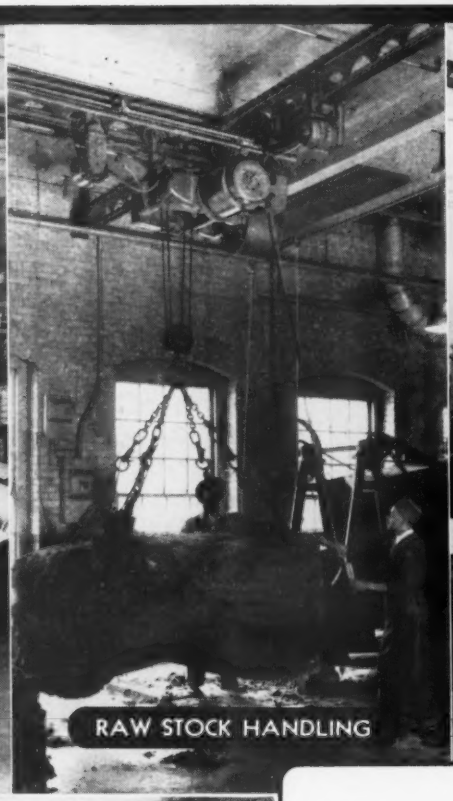
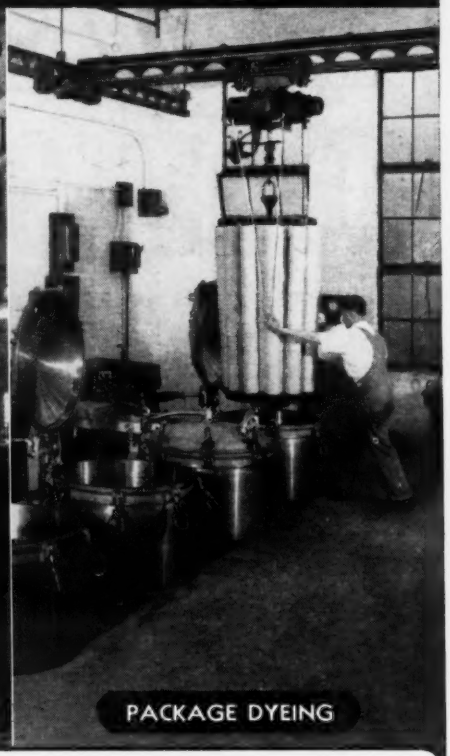


RAW STOCK HANDLING



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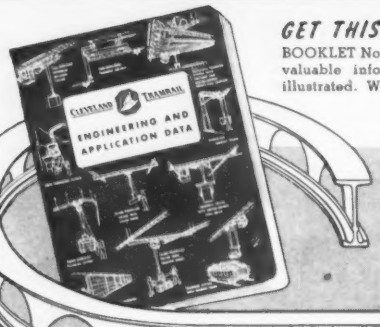
Efficiency — meaning costs and output of product — has been greatly improved in many textile mills with installation of Cleveland Tramrail, even with other production facilities remaining the same.

During the period following the war it is predicted that the use of Cleveland Tramrail will be accelerated tremendously because textile mills will require more efficiency in operation than ever before if they wish to remain in a favorable competitive position.

No other machinery offers as great returns for the small investment required as overhead materials handling equipment.



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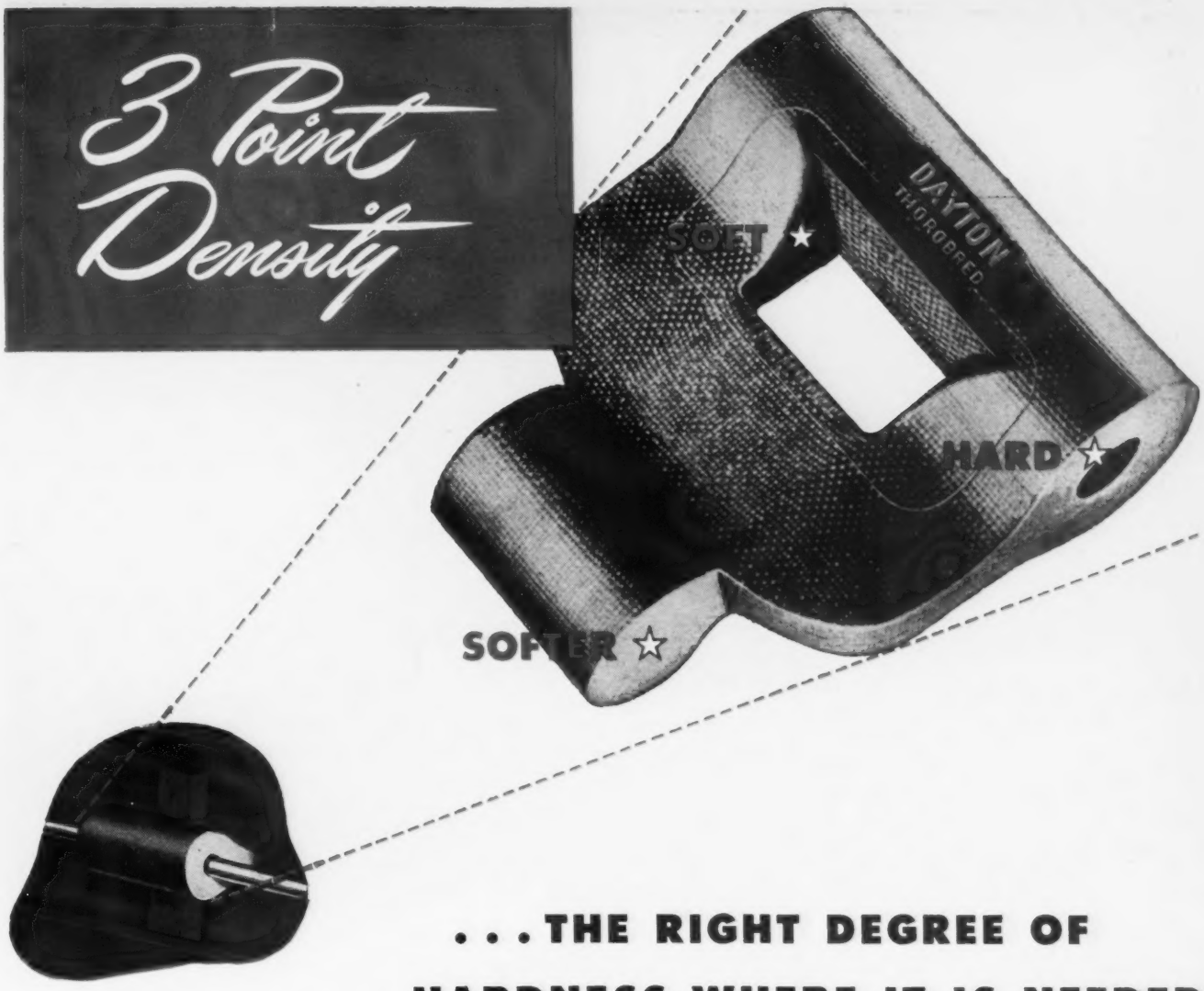
CLEVELAND TRAMRAIL
OVERHEAD MATERIALS HANDLING EQUIPMENT

3 Point Density



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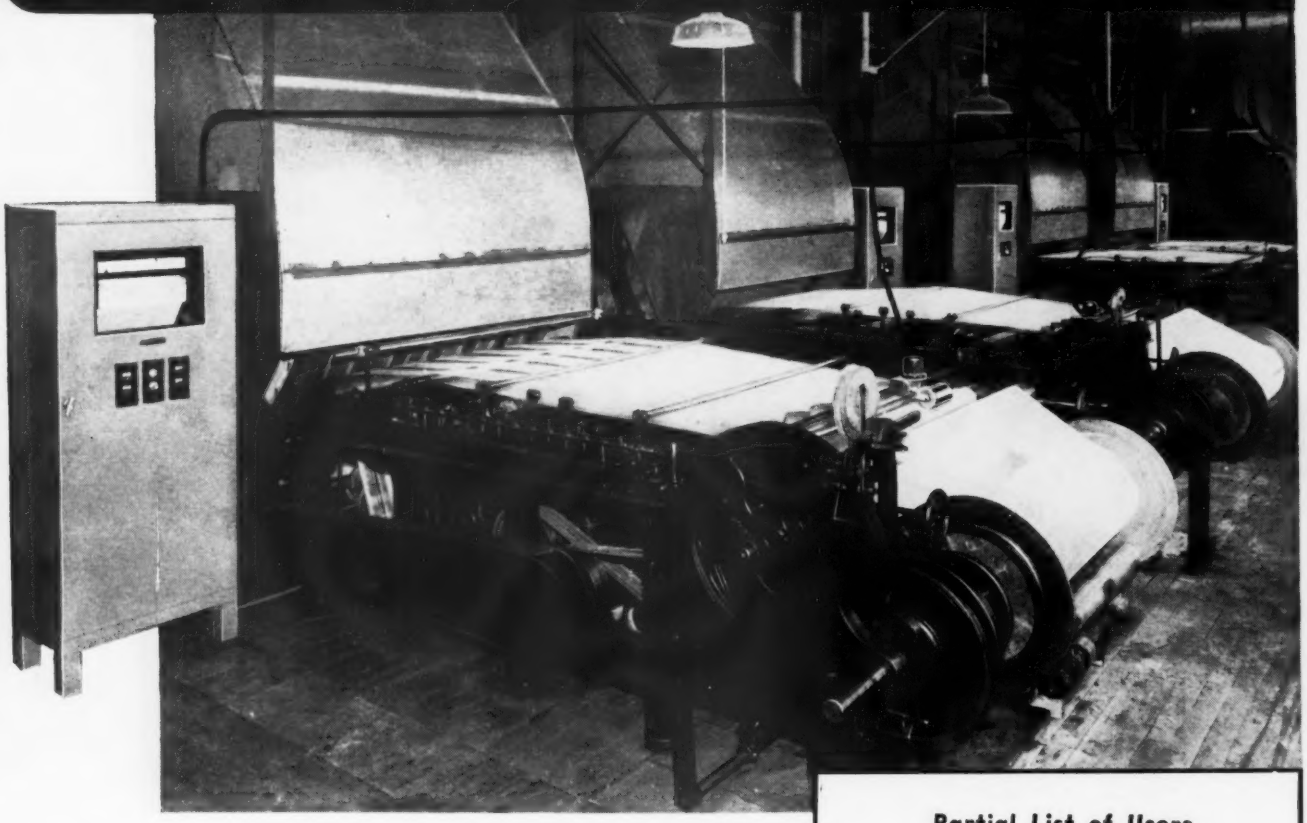

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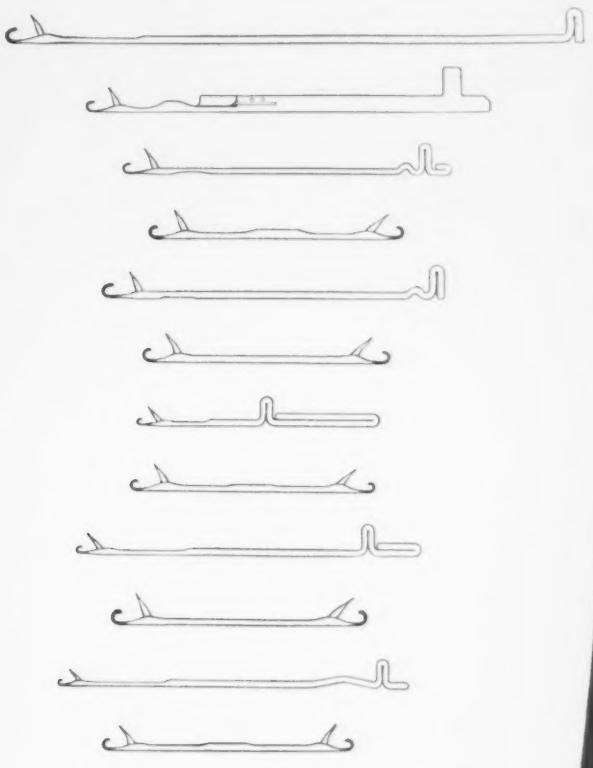

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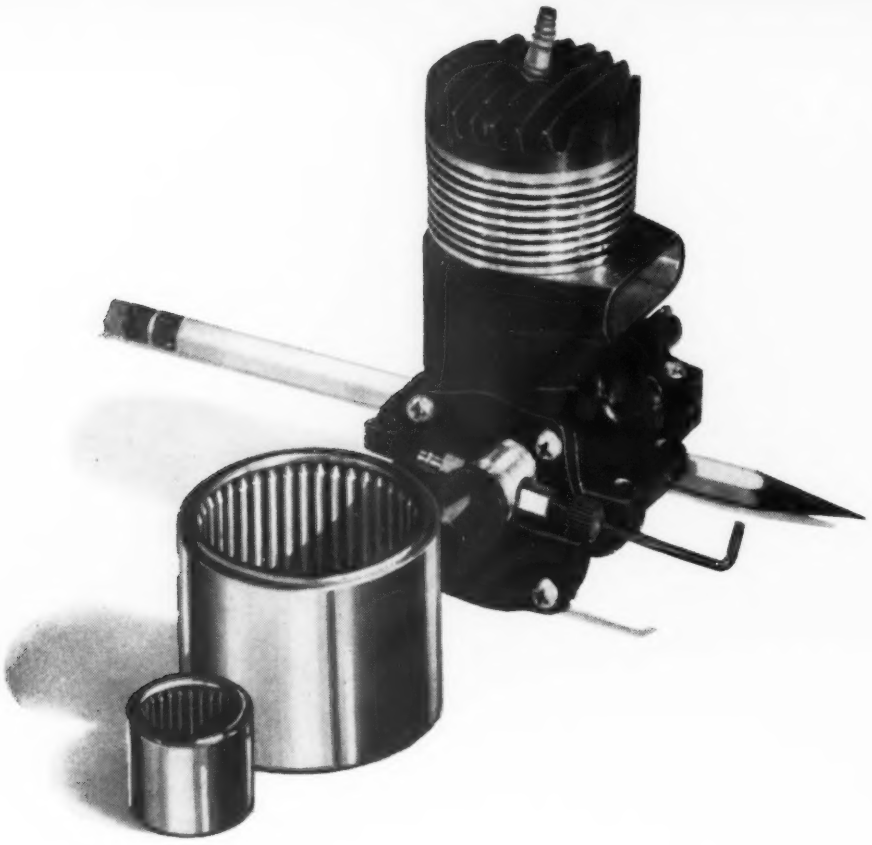

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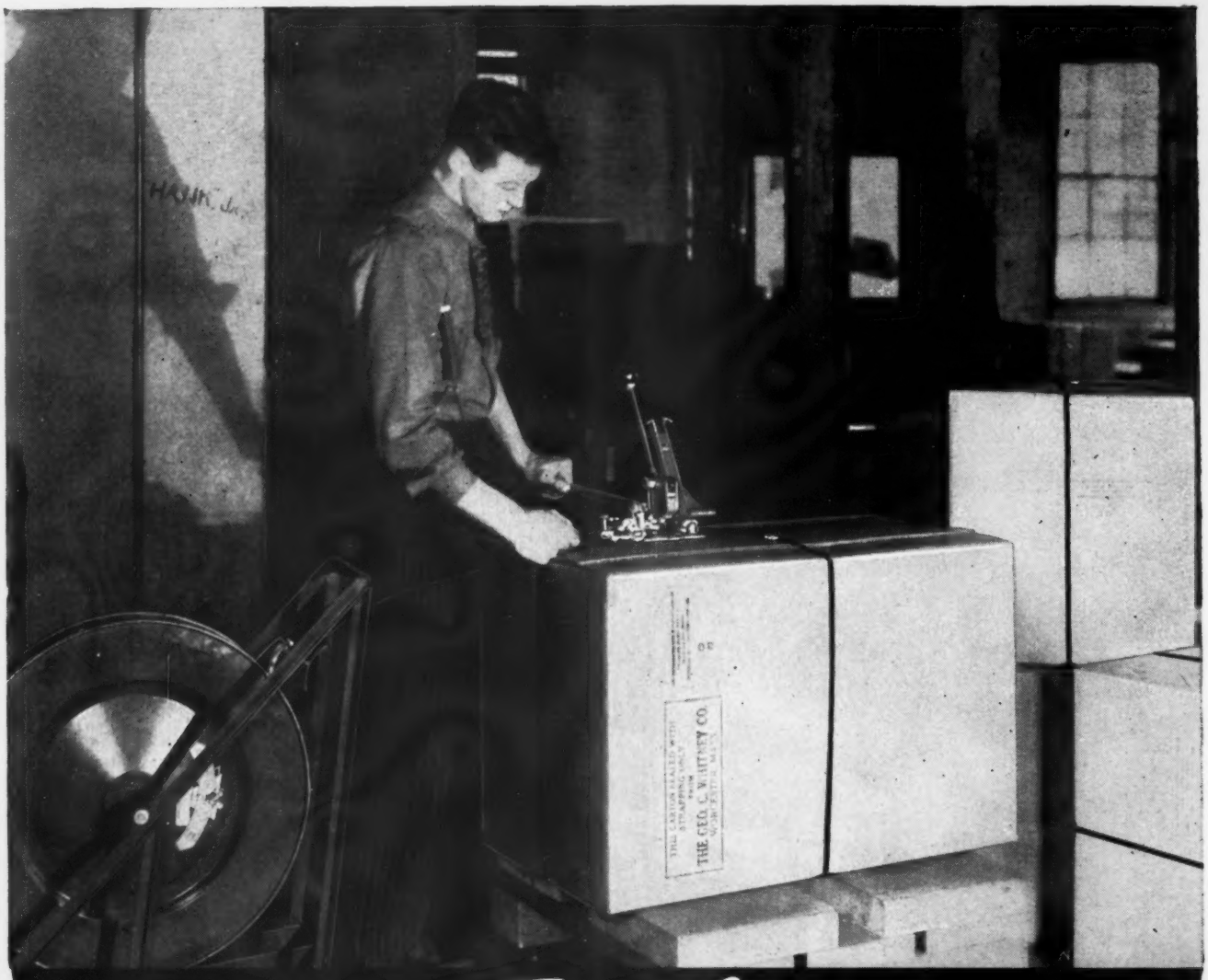

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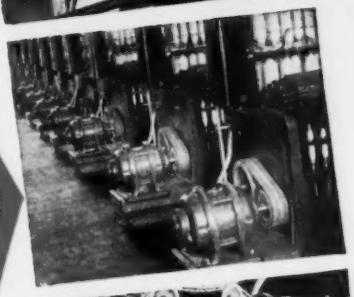

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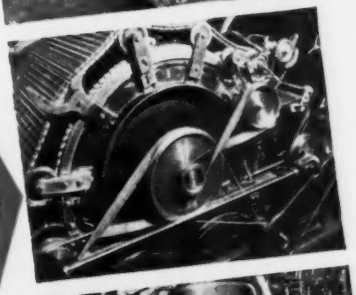

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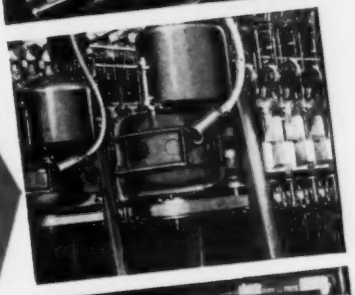

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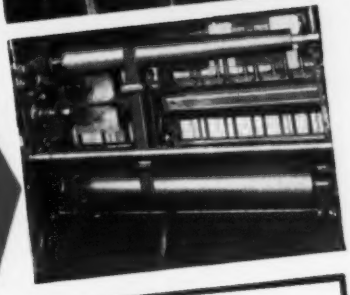

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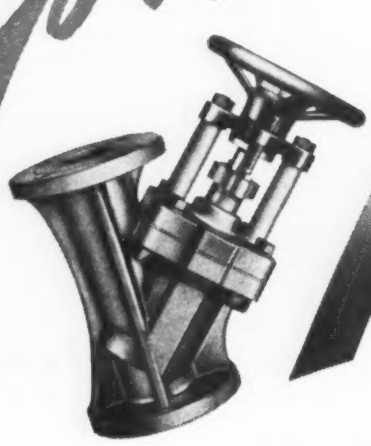


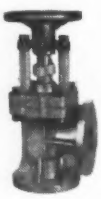
VALVES

What kind of Acid Valve do you need?

1 "United" Type R Valve? This ingenious valve, recently introduced by National Lead, offers advantages unobtainable with valves whose body and seat are cast as an integral unit. Because of its split-body construction it can be installed either as a "Y" or Angle pattern. All you do is reverse the position of the body section, as shown in the illustrations below. Thus, your supply stock can be held to a minimum by standardizing on *one* valve with *two* uses. Another feature is the removable seat and plug disc. Both can be replaced easily at nominal cost. Finally, seat and plug can be supplied in any alloy or material you specify. For normal applications, the valve is furnished in three standard ways: 1. Lead plug disc and stem integral; 2. Removable lead plug disc; 3. Removable rubber plug disc.

Two valves in one! *Simply reverse the position of the body sections and the "United" Type R Valve is changed from a "Y" pattern to an Angle pattern. Available in hard lead or lead-lined cast iron or cast steel.*

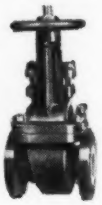
2 "United" Chem-Rayon Valve? This valve is manufactured in both "Y" and Angle design. The body is cast hard lead. Fins of the same metal reinforce and greatly increase the strength of body and flanges, while holding weight to a minimum. The stuffing box is of exceptional depth. Packing can be replaced under pressure. Steel and bronze bonnet are completely covered (except wheel and bushing) with hard lead. Available with removable plug discs of rubber or lead.



We also supply check, foot and diaphram valves in hard lead, cast iron, and cast steel lead lined.

3 "United" Type C Valve? The important difference between this type and the "United" Chem-Rayon valve is in the materials used for the body and bonnet. In the Type C valve these are made of cast carbon steel or cast iron heavily lined with lead. Furthermore, the body is cast oversize in order to allow a full flow area after lining. All parts of the two valves are interchangeable. Available in both "Y" and Angle patterns.

4 "United" Gate Pattern Valve? This is a most efficient gate valve, available with body and bonnet in hard lead, lead-lined cast steel or lead-lined cast iron. It is designed for use wherever an absolutely drip-proof acid valve is a "must." The seat is hard lead, cast integral with the body lining. This valve can be furnished with disc made of acid-resisting rubber, bakelite, or special alloys as required. You get a satisfactory seal at all times.



No Matter what Your Acid-handling Problem . . .

Go "National" for Lead

National Lead is ready to consult with you and supply any type of lead pipe . . . valves . . . sheet . . . lead-lined or lead-covered equipment . . . even complete acid recovery plants. And behind every National Lead product, every National Lead recommendation, are years of experience and many important installations in every field handling corrosive liquids and gases.

NATIONAL LEAD COMPANY

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NO MORE LUBRICATION WORRIES!

...thanks to RELIANCE *Series C* MOTORS

This special bearing design protects Reliance Series C Motors indefinitely!

You can't grease 'em wrong! That's because Reliance Series C Motors are designed and precision built to eliminate lubrication worries. In most uses, these factory-lubricated motors perform dependably *for years* with no additional lubrication. Where unusual conditions make occasional attention necessary—or if it is your practice to lubricate at regular intervals—undergreasing or overgreasing can make no difference.

Send coupon below for the whole story of how Reliance Series C Motors end your lubrication worries!

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RELIANCE ELECTRIC & ENGINEERING COMPANY
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Please send me your Bulletin C-118 which explains the advantages of Reliance Series C Motors.

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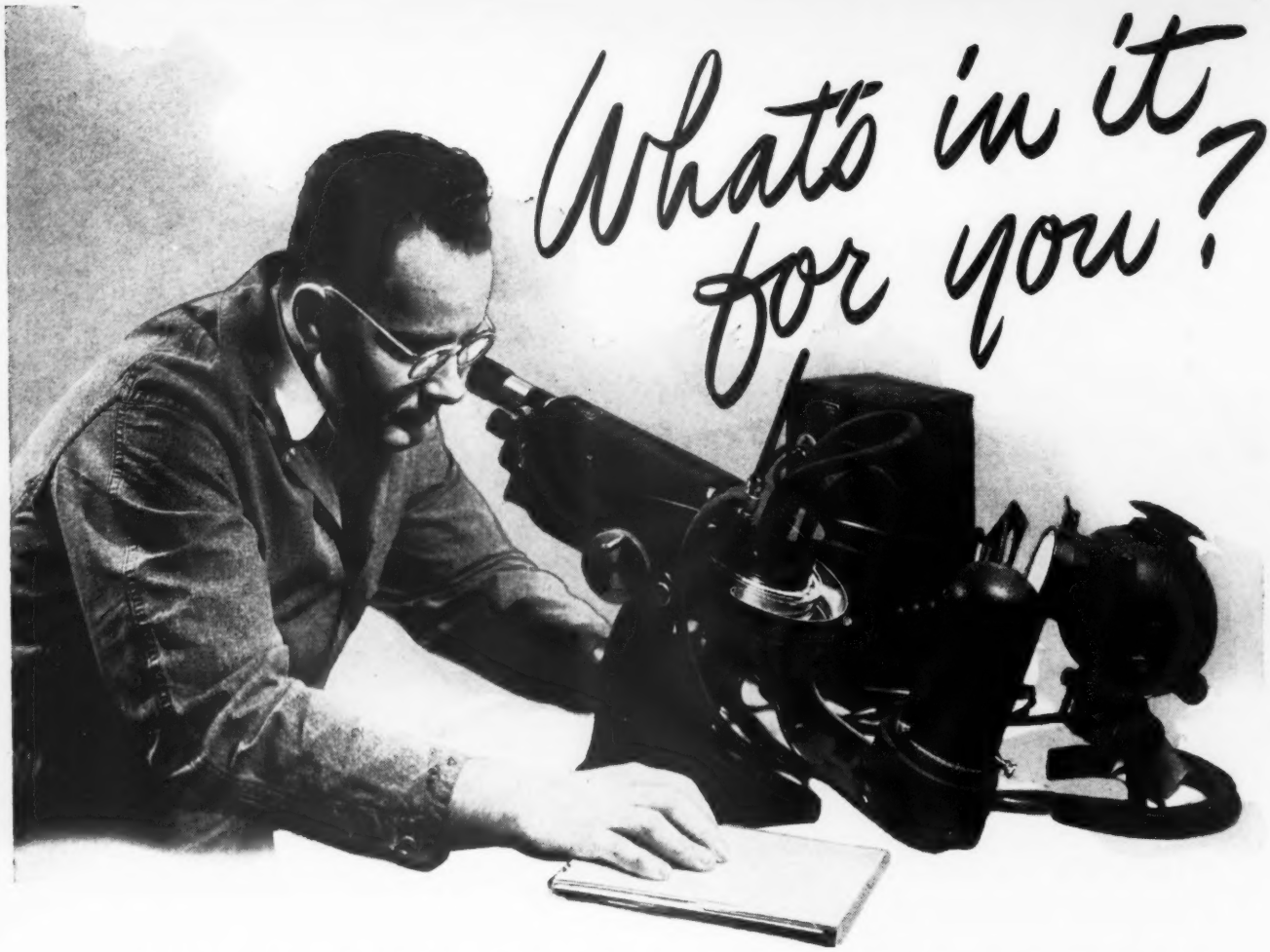

In this special machine there's plenty for you as a user of industrial lubricants. With the modern Refractometer, Sinclair Laboratory specialists keep posted on what's in your industrial lubricants. It shows them what properties to strengthen, so the finished product will perform best in any specific application.

Index of refraction and specific dispersion, determined by the Refractometer, is a measure of the chemical structure of lubricating oils. By use of such instruments as the Refractometer, Sinclair maintains important control points in the manufacture of dozens of industrial lubricants.

Such laboratory research and control gives you assurance that Sinclair lubricants are made correctly to provide the kind of special protection your valuable machinery requires.

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Lubricants for Industry

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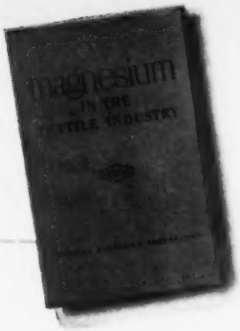

DEMAND... for higher quality fabrics at lower cost is causing designers of textile machinery to turn more and more to the use of magnesium. Textile designers will find the information contained in this book helpful in developing efficient new magnesium parts . . .

Magnesium Tricot Warp Beams

. . . For example. They're time savers. Their extremely low weight speeds up the warping operation. Their permanent dimensional accuracy reduces vibration, lowers maintenance costs.

High strength and stiffness enable them to withstand the tremendous forces exerted by modern yarns. They mean more yards per hour—of any yarn.

For a copy of "Magnesium in the Textile Industry", or for a quotation on your tricot warp beam requirements, write ALUMINUM COMPANY OF AMERICA, sales agent for American Magnesium products, 1705 Gulf Building, Pittsburgh 19, Pennsylvania.

MAGNESIUM MAZLO Reg. U.S. Pat. Off. PRODUCTS

AMERICAN MAGNESIUM CORPORATION

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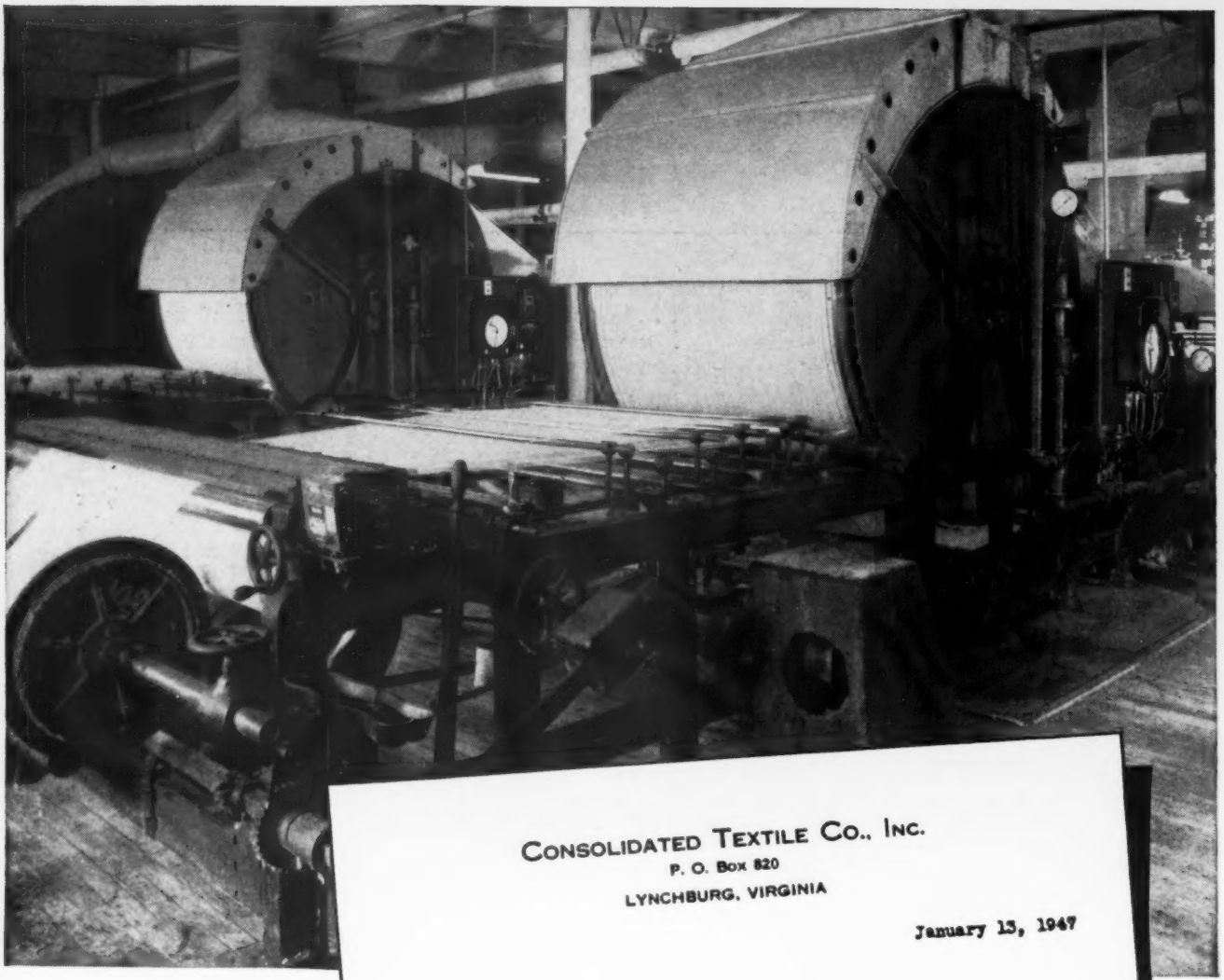

CONSOLIDATED TEXTILE CO., INC.
P. O. Box 820
LYNCHBURG, VIRGINIA

January 13, 1947

Taylor Instrument Companies,
Box 110, Rochester 1, N. Y.

Attention Mr. W. W. Lockwood

Dear Sir:

Since the installation of the new Taylor Automatic Controls on our Slashers, we have found a definite improvement in the running of our weaving.

With these controls we have reduced the amount of starch used, reduced shedding in weave room, increased our efficiency, and the cloth weights have been more uniform. We are very much pleased with the improved results we are getting.

Yours very truly,

J. H. Burgess,
Asst. Supt.

JHB:SL

YOU

may be writing us letters like this after installing Taylor's new Automatic Slasher Control System. With Taylor Cylinder Control (shown here) plus Taylor Cooking Kettle, Storage Kettle, and Size Box Control, you too can count on more uniform warps and increased weave room efficiency!

• • •

Instruments for indicating, recording and controlling temperature, pressure, humidity, flow and liquid level.

Beat rising costs with TAYLOR ACCURACY!

PALATINES for wool

PALATINE FAST DYESTUFFS

...offer the lowest coloring costs for quality results.

...have chrome color fastness (without the addition of chrome) by simple acid dyeing process.

...are fast to light, washing, perspiration, crocking, sea water and wear.

...are level dyeing on mixed wool and carbonized goods without neutralization—with excellent penetration. Most types are dischargeable with Rongalite.

...are particularly suitable for men's wear, dress goods, gabardines, tropical worsteds, cloakings, bathing suits, knitting yarns, carpet yarns and tops.

...on Nylon give maximum fastness to light and washing. The method of application is simple and the results are excellent.

GDC

more production with less manpower

GENERAL DYESTUFF CORPORATION

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ABBOTT MACHINE COMPANY

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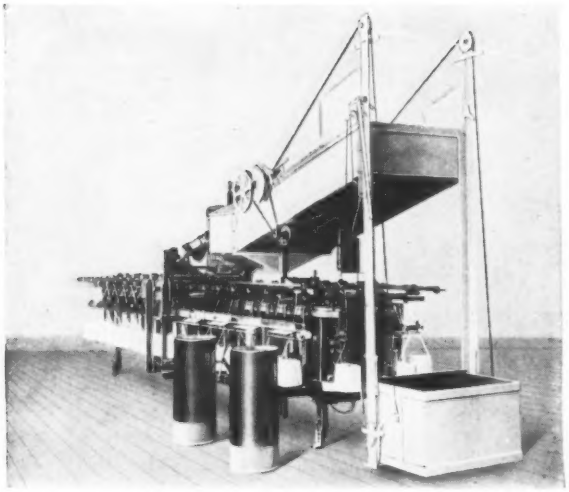
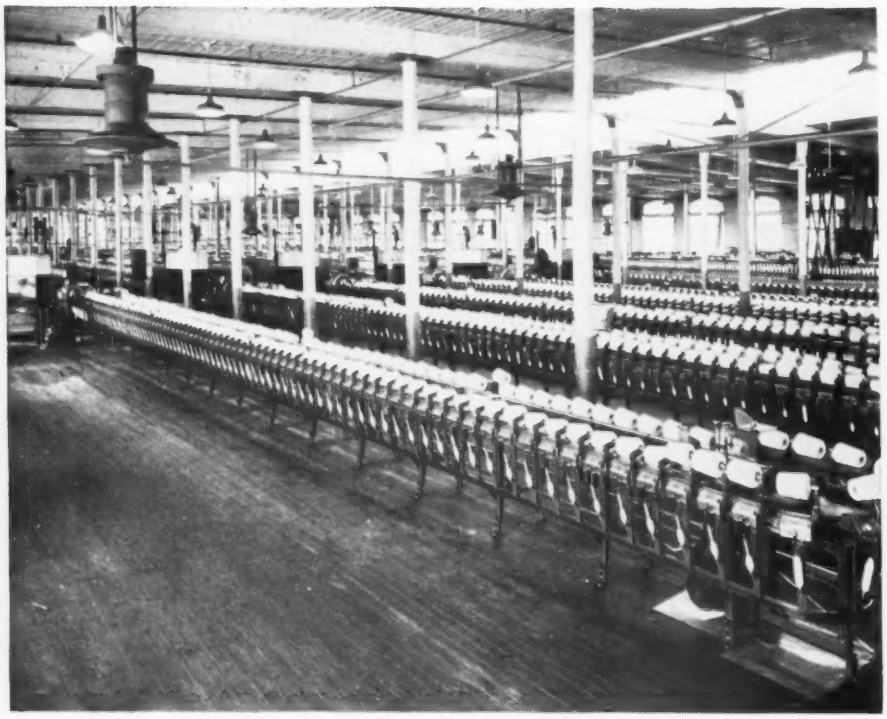


AUTOMATIC QUILLER

Travelling Spindles. Only one automatic head. Empty bobbins are dumped into large box on the floor, a lever is pushed which hoists the box up, dumps the bobbins, and returns to the floor automatically. Full bobbins discharge into cans or boxes. Minimum labor and investment cost. Production 2000 bobbins per hour per operator.



AUTOMATIC CONE OR TUBE WINDER

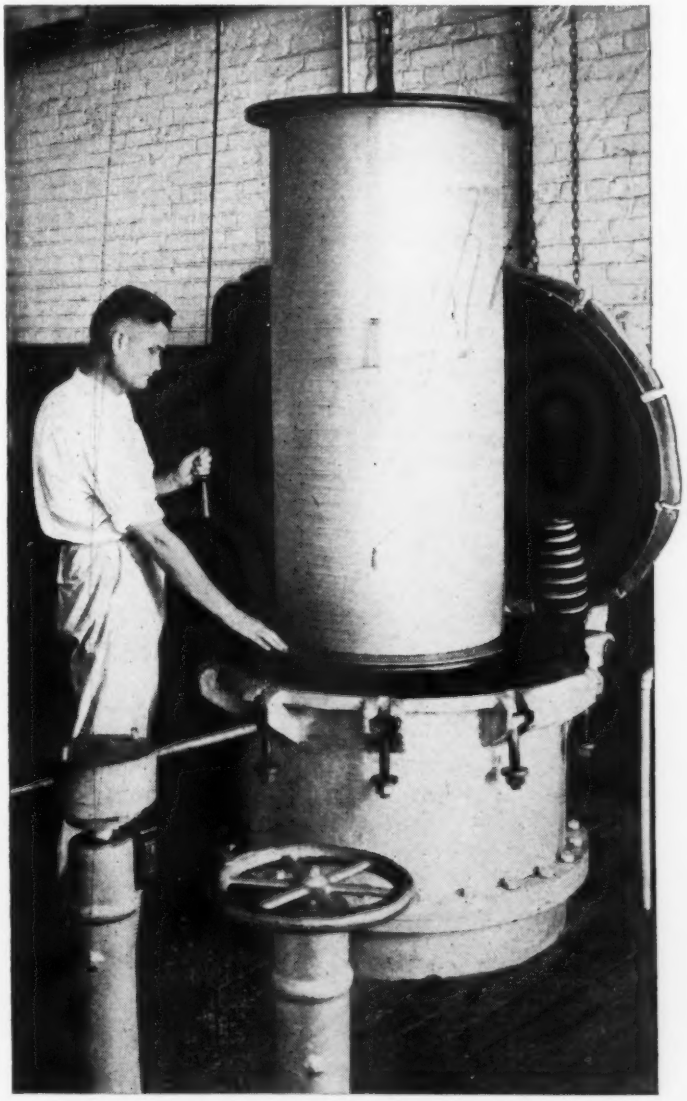
Travelling Spindles. 60 to 200 spindles with one operator.

Will wind
- Warping cones
- Twisting tubes
- Paper tubes
- Dye tubes
- Knitting cones

Production 900 to 1000 bobbins per hour per operator.

Investigate new method of spinning all yarn on large warp bobbins— wind and slub automatically onto four-pound cones — use cones in high-speed warping — also for rewinding on automatic quiller for filling.

REPUBLIC *Enduro* STAINLESS STEEL



Made of Republic ENDURO Stainless Steel, this dye beam presents a typical application for long-lasting ENDURO in the textile processing industry. Other applications include dry cans, tank and vat linings, tables, valves, reels, hosiery forms and many more.

Assures "True" Colors

Natural immunity to dye bath chemicals and bleaches . . . ease of cleaning that permits lightning-fast change from dark to light colors without danger of color carry-over . . . smooth, sanitary surfaces which have no effect upon the most delicate color shades . . . these are but a few of the reasons why it pays to specify Republic ENDURO Stainless Steel in your dyeing and bleaching equipment.

For the *complete* story about ENDURO Stainless Steel and its many money-saving applications throughout the textile industry, write for a free copy of Republic's new 20-page Booklet No. 444.

REPUBLIC STEEL CORPORATION
Alloy Steel Division • Massillon, Ohio
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ENDURO STAINLESS STEEL
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Other Republic Products include Carbon and Alloy Steels—Pipe, Sheets, Strip, Plates, Bars, Wire, Pig Iron, Bolts and Nuts, Tubing

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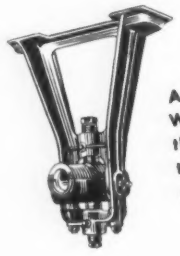
THE Wood's WAY

for top performance . . . maximum power . . . economical, efficient operation . . . and long, trouble-free service.

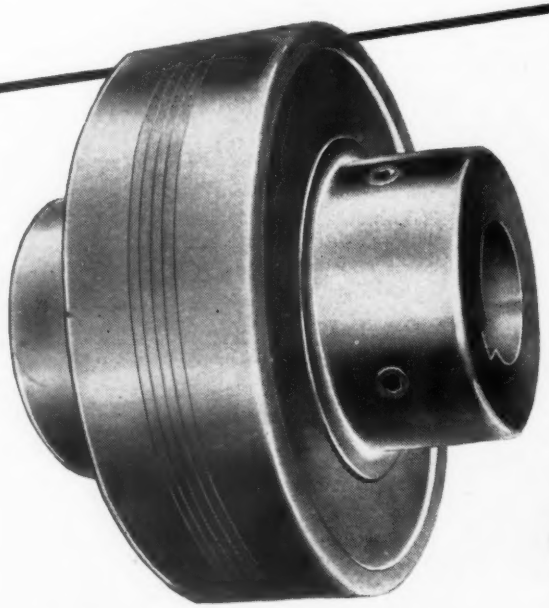
Properly designed . . . precision made . . . and carefully controlled during manufacture Wood's Products for Every Transmission Need require minimum maintenance and replacement.

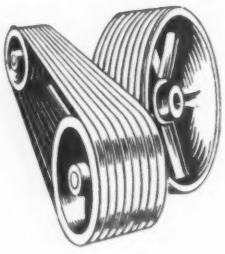
Investigate "The Wood's Way" to greater profits through increased production. It's the result of more than 88 years' experience in the design, development and manufacture of quality power transmission equipment.

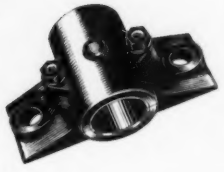
LONG LIFE LINE

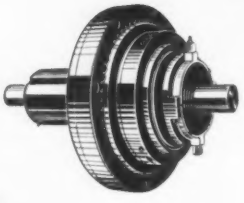


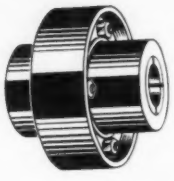
A few of the many Wood's Products used throughout industry to transmit power at lower costs.











T.B. Wood's

WOOD'S PRODUCTS FOR POWER TRANSMISSION

PULLEYS • CLUTCHES • HANGERS • PILLOW BLOCKS • COUPLINGS • BEARINGS • COLLARS • V-BELT SHEAVES AND COMPLETE DRIVES

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BRANCHES: BOSTON, MASS. NEWARK, N. J. PITTSBURGH, PA. CLEVELAND, OHIO DETROIT, MICH.

Not Non-Skid... but Non-Scuff!

THERE'S no guarantee on the seat of the red-cap's pants. But it's a safe bet that the good-looking luggage will come through this spill in perfect shape. That's because it's covered with a new kind of material, calendered from one of the GEON polyvinyl resins. Almost indestructible, this material also resists aging, sunlight, heat, cold, oils and acids, mildew, and most other normally destructive factors.

These and many other important properties may be compounded into literally hundreds of products, for home and industry, that may be made from GEON. GEON can be pressure or injection molded, calendered or cast into sheet or film. In solution or latex forms it can be applied as coatings for fabrics and fibres of all kinds as well as for paper and cardboard. Products made from GEON may be flexible or rigid, clear or opaque, brilliantly or delicately colored.

Thanks to its versatility there are applications for GEON in *every* home—*every* industry—just as there are for other B. F. Goodrich Chemical Company products such as HYCAR American rubber, KRISTON thermosetting resins, GOOD-RITE brand chemicals, and many other products of the present and the future. While we make no finished products we'll be glad to work with you on any special problem or application. Just write B. F. Goodrich Chemical Company, Dept. M-1, Rose Bldg., Cleveland 15, Ohio. In Canada: Kitchener, Ontario.

Geon
Polyvinyl Materials

Luggage is another interesting application for GEON polyvinyl raw materials

Luggage covered with Fantasote x Panrea

B. F. Goodrich Chemical Company

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GEON polyvinyl materials • HYCAR American rubber • KRISTON thermosetting resins • GOOD-RITE brand chemicals

Salvage and repair cast iron parts

Repair crews say Ni-Rod* is the smoothest-handling electrode they've ever used for welding cast iron.

With it, they get strong welds . . . sound welds . . . machinable welds.

. . . and they have an easy time getting them!

Ni-Rod has such excellent flow characteristics that slight variations in manipulation of the electrode have little effect on weld quality. Smooth, even deposits are readily applied in all positions — down-hand, vertical or overhead. No "special treatment" is needed; preheating is seldom required.

Broken or worn castings — even those in awkward, hard-to-get-at spots — are frequently repaired without dismantling equipment, thus saving time and labor, as well as preventing serious production delays.

You'll find plenty of jobs in your mill for Ni-Rod. This all-purpose electrode works equally well on either A.C. or D.C. It's available in diameters of 3/32", 1/8", 5/32" and 3/16" from the distributors listed below.

Order a 5-pound package of Ni-Rod for use by your repair crew on all cast iron welding work where strong, sound, machinable welds are essential.

*Reg. U. S. Pat. Off.

Send for Free Instruction Booklet

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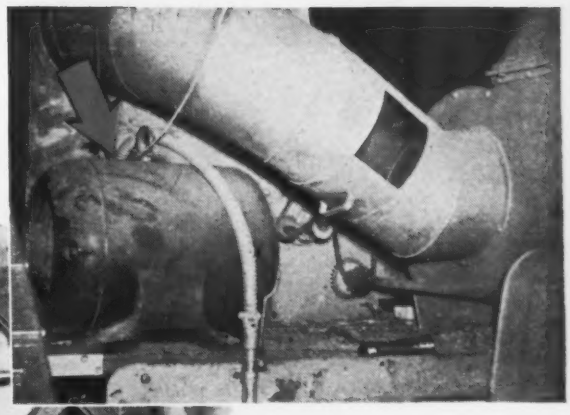
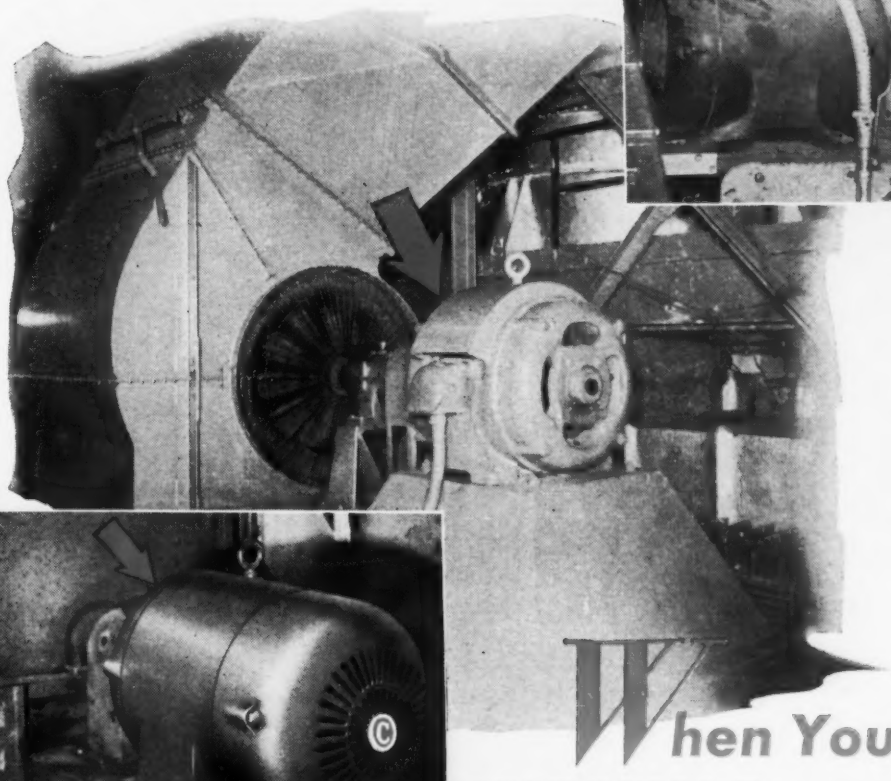
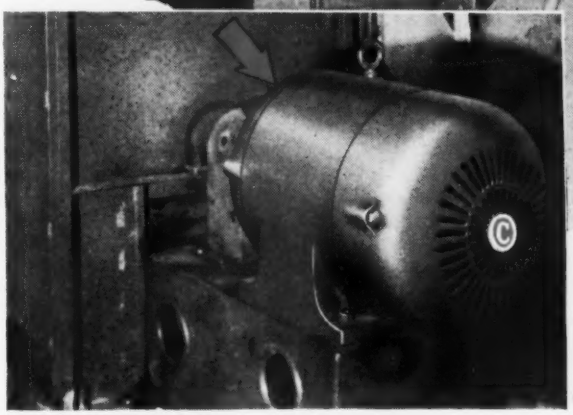


This 5 horsepower Century motor operates a conveyor in a grain elevator in an atmosphere charged with explosive dust.



Because this Century 200 horsepower motor operates a blower in the boiler house of a large generating plant it is *protected from falling objects* and dripping liquids.



In this installation the 15 horsepower Century motor is *totally enclosed fan cooled* because it operates in an atmosphere charged with corrosive fumes that would attack the vital parts of the motor.

When You Have a CENTURY Protected Motor ...Properly Applied

WITH the correct Century motor driving your machine you can have complete confidence that it will provide a long life of satisfactory performance.

From the wide range of standard types and sizes there is a Century motor that will meet the electrical characteristics and atmospheric conditions of nearly every application.

The three examples shown here each require a different kind of motor frame because of the differences in surrounding conditions. In addition to the fact that all three are powered by Century motors — they have other things in common. They are quiet starting, and they run smoothly and quietly due to their unusual freedom from vibration. They have the correct electrical characteristics to give top performance.

Century builds a complete line of electric motors and generators, fractional and integral horsepower, in the popular sizes to meet the requirements of appliances, industrial production and commercial needs.

Specify Century for all your electric power applications.

Century C MOTORS

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520

Rayon Plants by KOHORN

[No. 7 of a series of Kohorn Built Plants.]

This Plant Constructed in 1927

1919

1924

1935

1938

1945

SINCE RAYON WAS FIRST PRODUCED COMMERCIALLY

Oscar Kohorn & Co. have developed and improved rayon production. As suppliers of rayon machinery and consulting engineers we have faithfully served the rayon industry and we have helped many a new concern now ranking among the leaders in the rayon field.

Post-war competition will make plant efficiency imperative and particularly every new concern entering the rayon field must be certain of producing a superior yarn while maintaining low manufacturing costs and trouble-free production. Our past experience and present work enables us to advise our clients how to face post-war conditions, and to plan with them the modernization, expansion, and the new construction work necessary to meet present day demands for rayon, staple fibre and cellulose sheeting. Inquiries welcomed.

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SERVICES RENDERED:

PLANT LOCATION:

(a) Survey on the ground to determine location, man-power, transportation, markets, raw material, power, fuel and water supplies.
(b) Determine size of initial plant, and plan its expansion.
(c) Consultation on types of yarn, denier, packaging, etc.
(d) Estimates for land and building, equipment, and working capital.
(e) Estimates production cost and overhead sales and profit.

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(a) Furnish complete plans for buildings and machinery.
(b) Supply all production machinery and auxiliary equipment.
(c) Send KOHORN engineers to erect plant, install machinery and building equipment.

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(a) KOHORN Chemists and Engineers, start the plant and bring it into full production.
(b) KOHORN experts help train local labor.
(c) Modern chemical and mechanical processes, installed by KOHORN hold consumption of raw material and labor to a minimum.
(d) KOHORN engineers co-operate with your sales department in introducing product to the market.

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(a) KOHORN'S interest in your plant after it is turned over to you, continues. Consultation always available.
(b) Our lastest patents are put at your disposal when plant expansion is contemplated.

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AIM STRAIGHT FOR THIS

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UNITED STATES STEEL SUPPLY COMPANY
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WHETHER you need steel by the pound or the ton, you can rely on our nine conveniently located warehouses to give you the best possible service. And if you require help in solving problems of selection, application or fabrication, our metallurgists will be glad to assist you in every way.

Remember, this label is truly a *Symbol of Service* for all steel users. Whatever you want in steel—Hot Rolled or Cold Finished Bars, Structural Shapes, Plates, Sheets, Alloy Steel, Stainless Steel, Tools, Machinery, etc. —your best bet is to contact our nearest warehouse.

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UNITED STATES STEEL

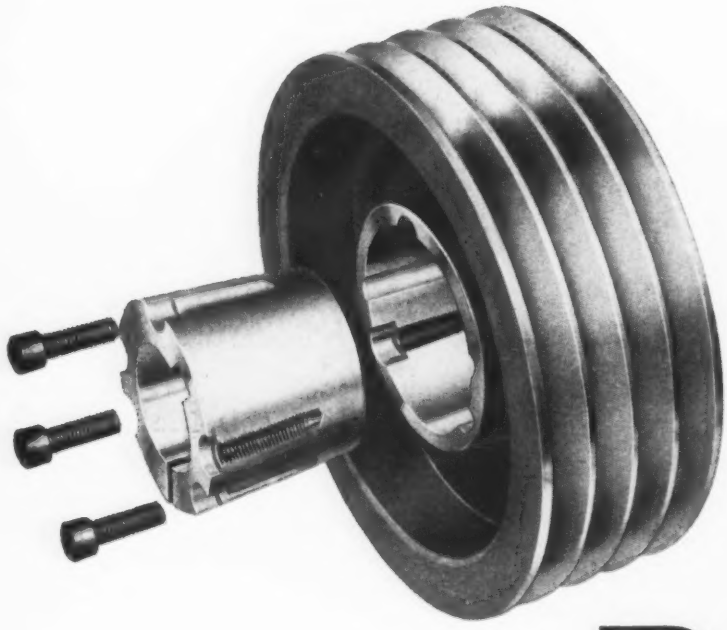
Complete unit.
Slip it on, line it up
and tighten while
sighting.

The simplest,
surest mechanism ever
devised for holding
wheels to shafts.

TAPER-LOCK BRAND

A New Cost-Saving Taper Bore Sheave

Holds fast to
the shaft with firmness
equivalent to a
shrunk-on fit.



Disengages
with less effort than
any other sheave.
Easy on. Easy off.

Complete
range of sizes in
Dual Duty (A and B);
B, C and D grooves.

DODGE

of Mishawaka, Ind.

For details about cost-saving developments in power transmission equipment, call the Transmissioneer—your local Dodge distributor. He's factory-trained, qualified to suggest ways to improve machine performance and increase production. Look for his name under "Power Transmission Equipment" in your classified telephone directory.

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FOR YOUR NAME PLATE REQUIREMENTS, WRITE OUR SUBSIDIARY,
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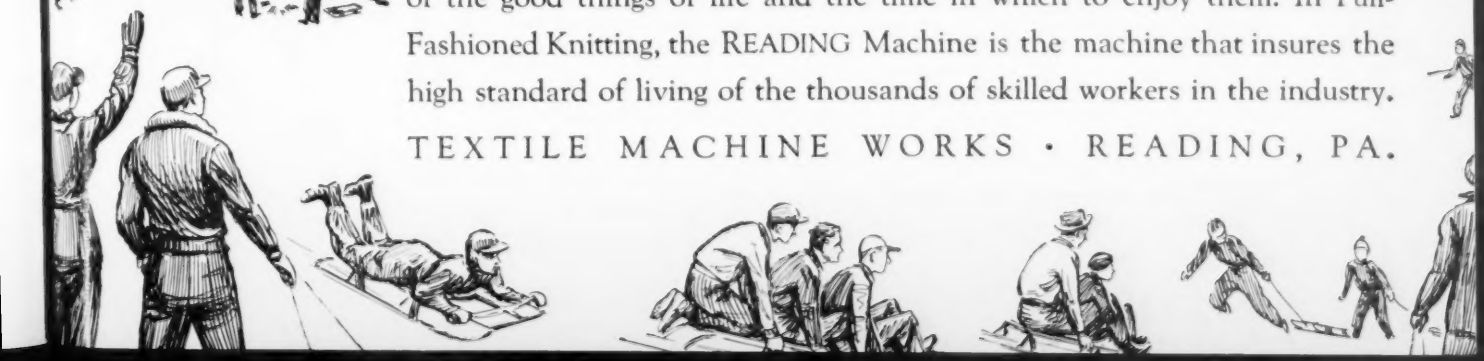
"A tool is but the extension of a man's hand, and a machine is but a complex tool. And he that invents a machine augments the power of a man and the well-being of mankind."

Modern machines have made Americans the world's most efficient workers, and with every increase in efficiency, the worker has increased his share of the good things of life and the time in which to enjoy them. In Full-Fashioned Knitting, the READING Machine is the machine that insures the high standard of living of the thousands of skilled workers in the industry.

TEXTILE MACHINE WORKS · READING, PA.



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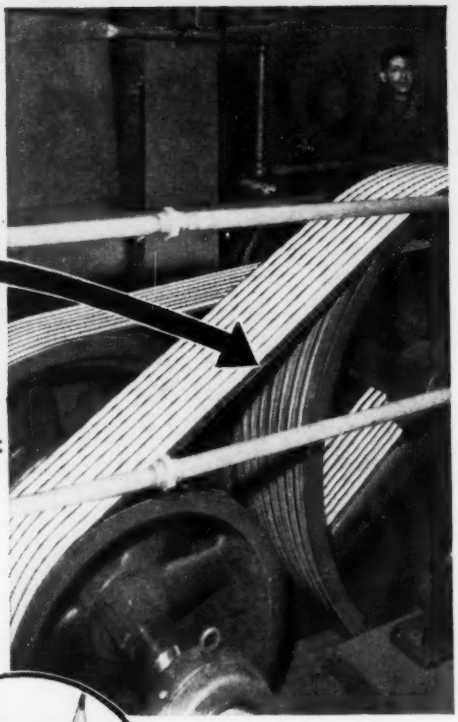
You See at Once That the SIDE of a V-BELT

is the part that GETS the WEAR

DIAGRAM OF V-BELT IN SHEAVE



Naturally so, because the sides of a V-belt do all the gripping on the pulley. They get all the wear against the sheave groove wall.

It's the sides, too, that pick up all the power delivered by the driver pulley. The sides transmit that power to the belt as a whole. And then, once more, it's the sides--and the sides alone--that grip the driven pulley and deliver the power to it.

That is why you have always noticed that the sidewall of the ordinary V-Belt is the part that wears out first.

---and Now See How the CONCAVE SIDE

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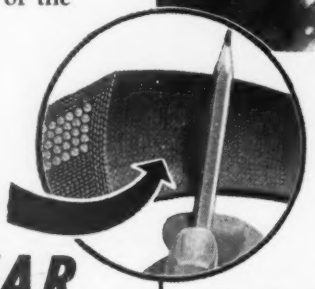

✓ REDUCES Sidewall WEAR Greatly Lengthening Belt Life!

Clearly, since the sidewall is the part that wears out first, anything that prolongs the life of the sidewall will lengthen the life of the belt.

The simple diagrams on the right show exactly why the ordinary, straight-sided V-Belt gets excessive wear along the middle of the sides. They show also why the Patented Concave Side greatly reduces sidewall wear in Gates Vulco Ropes. That is the simple reason why your Gates Vulco Ropes are giving you so much longer service than any straight-sided V-Belts can possibly give.

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Now that Gates Specialized Research has resulted in V-Belts having much stronger tension members -- tension members of Rayon Cords and Flexible Steel Cables, among others--the sidewall of the belt is often called upon to transmit to the pulley much heavier loads. Naturally, with heavier loading on the sidewall the life-prolonging Concave Side is more important today than ever before!

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World's Largest Makers of V-Belts

Straight Sided V-Belt

How Straight Sided V-Belt Bulges When Bending Around Its Pulley

You can actually feel the bulging of a straight-sided V-Belt by holding the sides between your finger and thumb and then bending the belt. Naturally, this bulging produces excessive wear along the middle of the sidewall as indicated by arrows.

Gates V-Belt with Patented Concave Sidewall

Showing How Concave Side of Gates V-Belt Straightens to Make Perfect Fit in Sheave Groove When Belt Is Bending Over Pulley

No Bulging against the sides of the sheave groove means that sidewall wear is evenly distributed over the full width of the sidewall—and that means much longer life for the belt!

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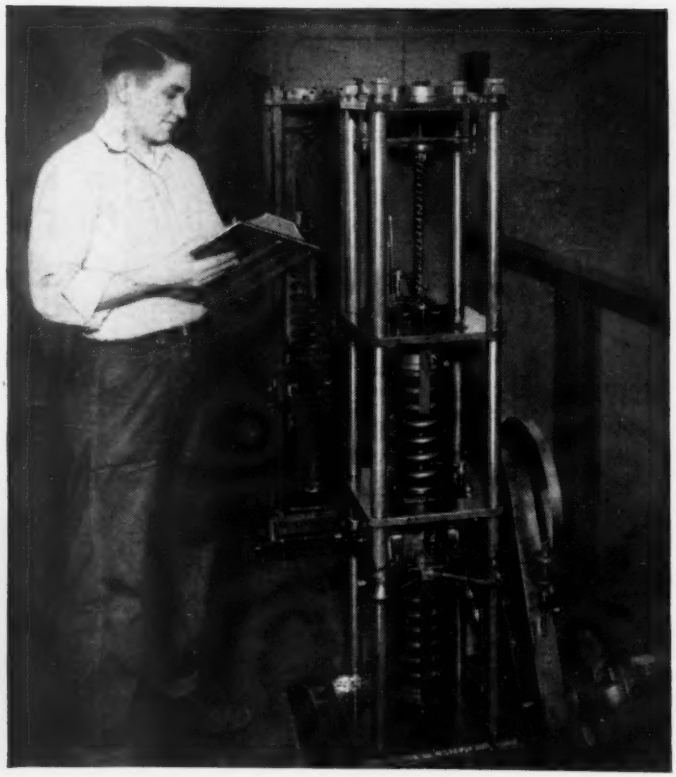
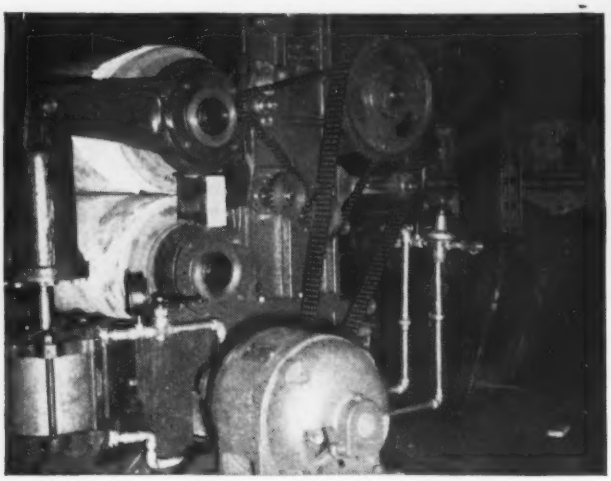
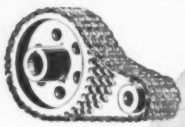
1 AND HERE'S WHAT that means to you. Where your equipment is subjected to momentary overloads and sudden strains, the inherent elasticity of roller chain will help absorb those damaging shocks and protect your equipment.



2 WE'VE ACTUALLY PROVED that roller chain is elastic. With this testing machine, designed and built by our engineers, we stretch this small section of Baldwin-Rex Roller Chain about ⅛-inch with each load application. We do this more than 10,000,000 times. Each time the chain must withstand the load and retract to its original length in order to meet our rigid specifications.



3 TAKE THIS DRIVE on a hydraulic squeezing machine. The elasticity of the Baldwin-Rex Chain absorbs the severe shock loads . . . yet continues to transmit the positive power needed to avoid spoilage. There is no slip . . . no power waste!



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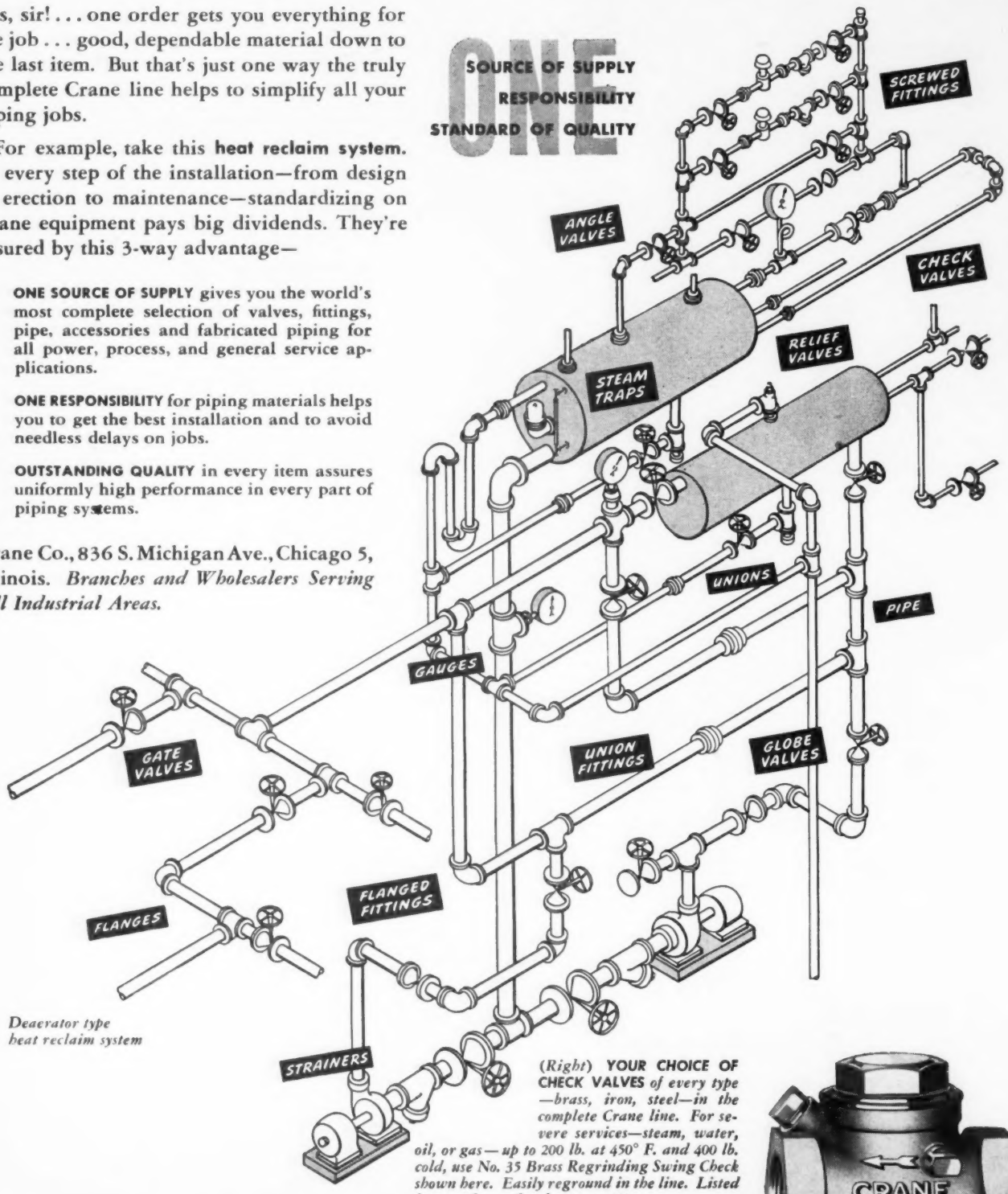

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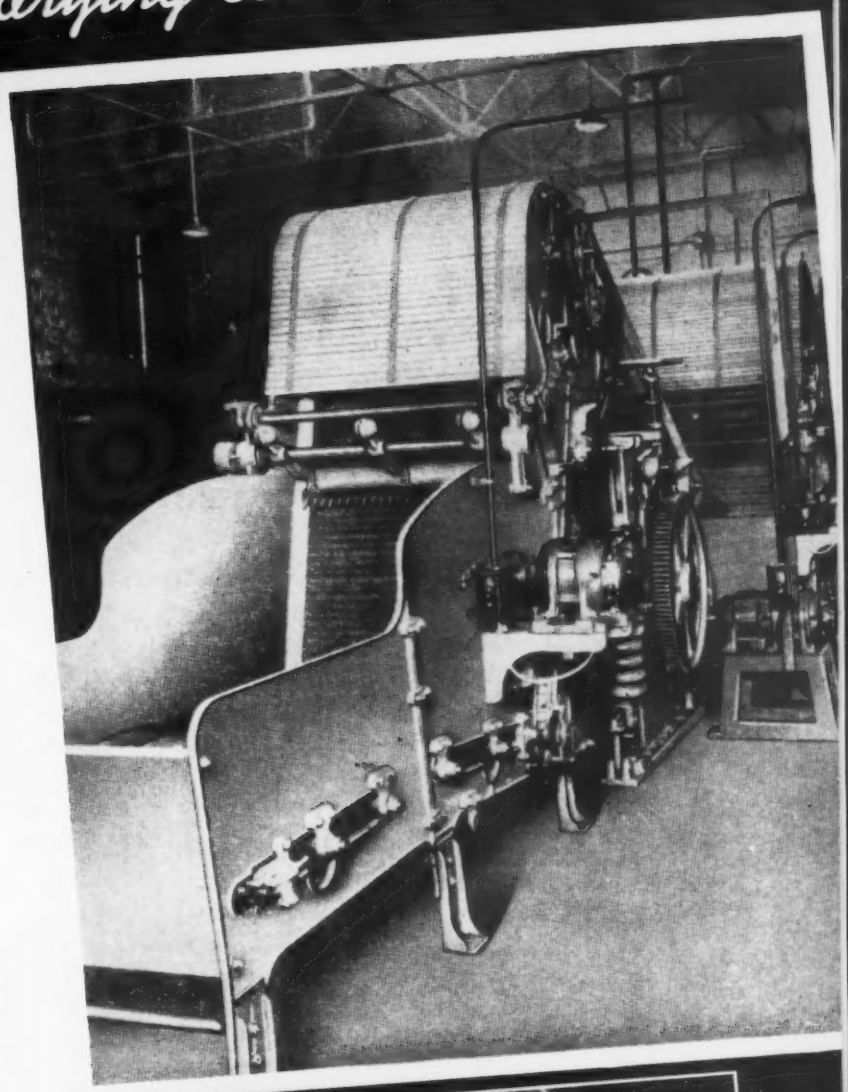

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Detail of the Pneumatic Load Lift

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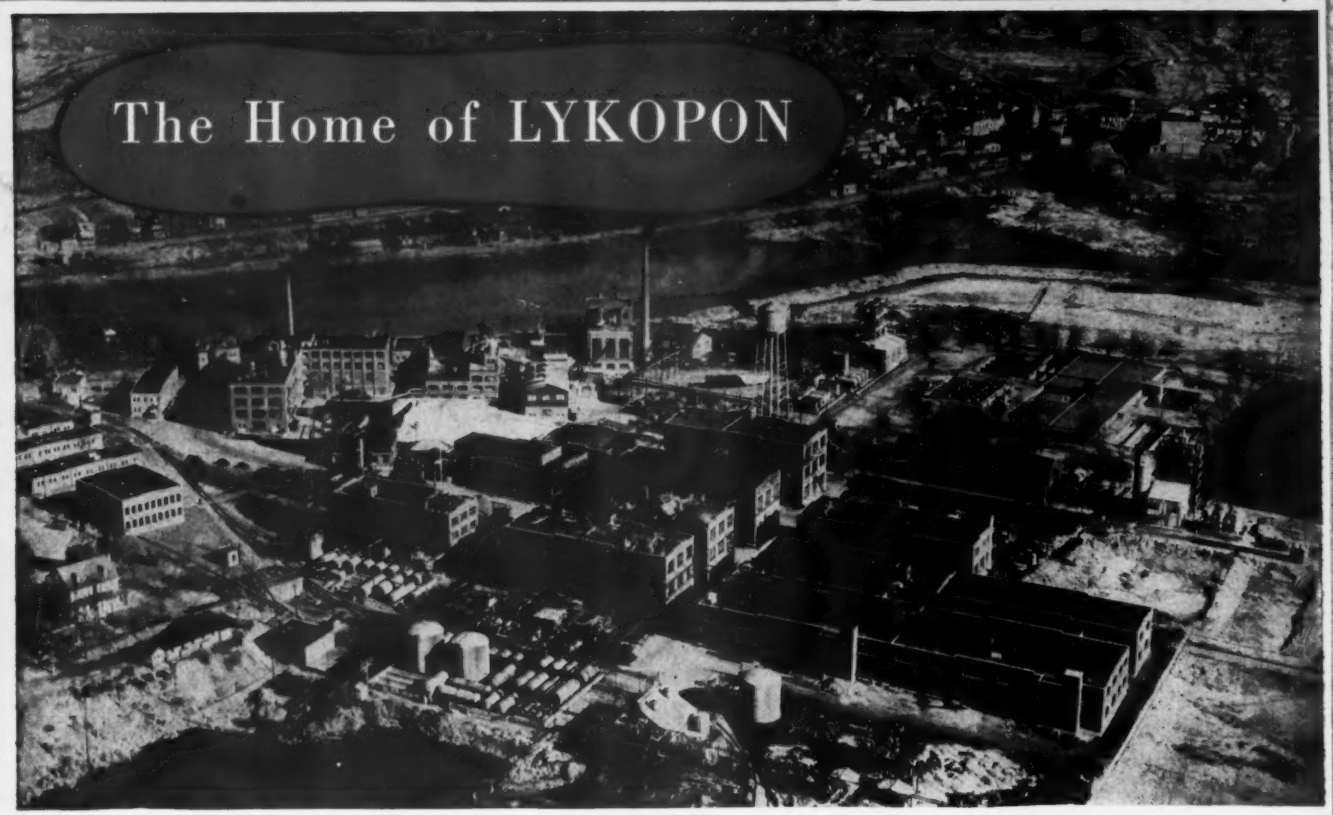

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INDUSTRY-WIDE BARGAINING...

Death Trap for Business, Suicide for Free Labor

IF CONGRESS is to succeed in its present efforts to prevent strikes in key industries from devastating the nation, it will have to put a crimp in industry-wide collective bargaining. This kind of bargaining is designed to apply agreements between employers and organized workers on wages and working conditions to an entire industry.

Further, if extension of this type of bargaining is not curbed, there is reason to believe that it will undermine the freedom of both American business enterprise and American wage earners. For, while increasing the destructive power of labor disputes, the general spread of industry-wide bargaining would so concentrate the fixing of wages—by far the largest element in the cost of production—that government regulation would be a next short step. With that step taken, freedom for business enterprise and freedom for labor would be well on the way out.

Unfortunately, industry-wide bargaining is commonly regarded as presenting a general conflict between organized labor and employers, with unions favoring it and employers opposed to it. This mistaken notion raises the heat of much of the discussion without increasing the light. The fact is there is no such general conflict. Employers and organized workers are on both sides of the argument about industry-wide collective bargaining. For example, while some union leaders are characterizing as labor baiters all those who raise the slightest question as to the desirability of industry-wide bargaining, organized workers in the air transport industry are strenuously opposing that type of bargaining; and the employers are advocating it.

Some Employers Like It

The reason there is in fact no clear cut issue between employers and unions over industry-wide bargaining is readily understandable. It presents certain advantages to both sides in the bargaining process. For example, union advocates of such bargaining generally stress the fact that industry-wide agreement on wages protects wage standards from being undercut by lower wage areas and lower wage employers. By much the same token, however, employers who like it often emphasize the fact that industry-wide bargaining may save certain well-managed and prosperous companies from being singled out for particularly heavy wage exactions. This general point has been underlined in both the full-fashioned hosiery industry and the West Coast paper and pulp industry. There, local unions, affiliated with international unions, have protested that industry-wide collective bargaining prevents them from getting from especially prosperous employers wages as high as they could get if allowed to go it alone in collective bargaining.

So long as employers remain subject to the federal antitrust laws while unions are exempted, the balance of power in industry-wide bargaining would seem to be heavily weighted on the side of the unions. If, for example, employers were to announce an intention to match an industry-wide wage increase by an industry-wide price increase, there is no doubt that they would promptly be indicted for violation of the federal antitrust laws. Even so, the fact remains that some employers favor industry-wide bargaining while some segments of organized labor are against it.

A Clear Cut Public Issue

The industry-wide bargaining issue as it affects the public, however, is clear cut. It is concentration of economic power (in the hands of both unions and management) which can make industrial conflict devastating to the public welfare. At least five times within about a year—in steel, on the railroads, in the maritime industry and twice in the soft coal industry—strikes prompted by union efforts to impose industry-wide agreement about wages and working conditions have paralyzed large parts of the nation's economic life.

In soft coal about 90% of the production workers are members of the United Mine Workers. In steel

about 80% of the production workers are members of the United Steelworkers, C. I. O. In some other key industries there is a comparable degree of concentration of union control. In the face of such concentration many employers see no alternative but to get together on their side for industry-wide bargaining. But when they do so in key industries, the odds are lengthened that failure to agree on wages and related matters, will result in generally ruinous conflict. If agreement is reached, the chances are increased that it will take too little account of the welfare of the consuming public.

It is possible to have industry-wide bargaining on many subjects other than wages. *But the main interest is wages; and the main drive is toward industry-wide and ultimately nation-wide uniformity. Such uniformity is the deadly enemy of industrial decentralization and the pioneering expansion of industry in new areas.* Why pioneer, with inexperienced workers, if the wage rate must be uniform for the whole industry? Moreover, it would also be hard to conceive of a more effective way to put a blight on local efforts to improve industrial relations than to make wage rates and other working conditions uniform throughout the industry and then the nation. *However, among many other dangers, the overshadowing danger in industry-wide bargaining lies in its concentration of economic power.*

Wages Monopolized

On the average, the cost of labor accounts for about two-thirds of the total cost of all industrial products. The universal spread of industry-wide bargaining would thus concentrate in relatively few hands control of the greater part of the cost of industrial production. There is no reason to believe that even without disastrous strikes, such concentration would long continue free from government regulation. That would turn more earth for the graves of American business enterprise and American working men's freedom.

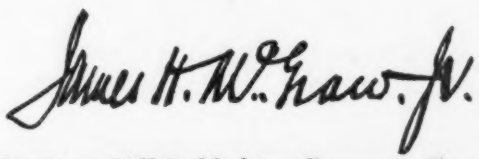
Those who believe that industry-wide bargaining serves the public well—and many sincere people do—stress the fact that, on the whole, it has worked in the industries where it has been tried over a considerable period. Most of the industries of which this is true, however, are not key industries. The pottery industry, the glassware industry, and the silk and rayon dyeing industry—to cite a few in which industry-wide bargaining has been practiced with considerable success—are important industries. But they are not industries in which strikes would have a ruinous impact on the nation. In contrast, a strike in the soft coal industry as the result of a breakdown of industry-wide negotiations quickly becomes a national disaster. The dangers inherent in industry-wide bargaining are multiplied accordingly.

England No Guide

Those who think extension of industry-wide bargaining would be good for the public often emphasize the fact that it has worked smoothly in England, where it has been extensively practiced. *Not the least of the things it has smoothed in England, however, is the transfer from private enterprise to state socialism of industries in which industry-wide bargaining by monopolistic unions and employer groups had so badly undercut competition that private enterprise had lost much of its justification.* A general extension of industry-wide bargaining could be expected to have the same consequences in this country.

The best way to curb industry-wide bargaining is a question which lies beyond this discussion. *Much would be accomplished if the federal government would discontinue its active promotion of industry-wide adjustments, in the fields of both labor and management, at which it has been busy ever since N. R. A. days. Still more would be accomplished if the federal antitrust laws were applied with even-handed justice both to unions and employers—a course urged in the 53rd editorial in this series.* Perhaps a definite limitation of the scope of labor agreements would also be necessary.

The effects of industry-wide bargaining in increasing the extent of public regulation of industry will vary. They will, of course, be less pronounced in railroads and other public utilities, which are already extensively regulated, than they will be elsewhere. For unregulated industries, however, industry-wide bargaining carries the threat of extensive regulation and, along the way, of industrial conflict devastating to the public. In these excited times, to say what I have said here is to invite characterization by overheated partizans as a foe of legitimate union progress. That is perhaps not so bad, however, as to qualify as a pall bearer for both American business enterprise and some of the basic freedoms of American working men. That may well be the fate of those who blindly accept the expansion of industry-wide collective bargaining as being "in tune with the times."



President McGraw-Hill Publishing Company, Inc.

THIS IS THE 55TH OF A SERIES

TEXTILE WORLD
FEBRUARY, 1947 • VOL. 97, NO. 2

TEXTILES SHOW POWER

To Reach New Heights

HIGHLIGHTS: *Review of production and achievements of 1946 gives basis for confidence in 1947 and succeeding years—Textile output all over world is on rising trend—Technology makes gains, and research holds out helping hand—Textile employees now better paid and better provided for than ever.*

By WILLIAM B. DALL,
Managing Editor, TEXTILE WORLD

YOU PROBABLY REMEMBER October, 1946, as a month of unusually pleasant autumn weather.

But it was more than that.

October, 1946, was the all-time peak of peaks in monthly fiber consumption by the textile mills of these United States. In that month, 671,600,000 lb. of cotton and wool and rayon was started into production. The nearest approaching months of the past are October, 1941, and March, 1943, both about 3% below; and June, 1942, 4½% below. This 1946 giant is 15% higher than the monthly average for the year, and 8% over the 1942 monthly average.

Will this sort of month occur more or less frequently? An answer to that would be a forecast of the textile industry of tomorrow. The editors of TEXTILE WORLD have endeavored to present an answer in the pages which follow. In this realm of star-gazing, we have not been reckless enough to name months and years; but we have supplied a lot of data bearing on the problem, including a seasoned economic analysis of the likely trends productionwise for 1947. We have also gathered and recorded the facts of recent mechanical accomplishments and the aspirations of leading engineering and research minds in the textile field.

Despite the possibility of some readjustments before 1947 closes, it does not look like a backward year to economists. Federal regulations have in large part been lifted from the industry, and their numbing effect is gradually wearing off. Abnormal scarcities in staples are on the mend; and the competition of free enterprise should bring to consumers higher quality at a fair price, which is all that any one not a charity patient could desire. Activities of the new Congress are encouraging to business generally, and there is hope for settlement of many annoying problems.

Many new minds are at work on textile-manufacturing devices, and it is heartening to realize that this sort of effort is never fruitless. That results come relatively slowly is an element of safety for the millions of dollars already invested in the industry. To use the familiar jingle of words, it seems true that the industry's progress will be *evolutionary* rather than *revolutionary*.

Because it may be dangerous to overstay the adolescent period in which we have considered our textile industry as circumscribed by the boundaries of our country, there is included in this "Annual Review and Forecast" a roundup of textile trade in the more important countries of the world.

The typical plan of most of these countries is the building up of a home industry which will completely satisfy domestic needs and later perhaps produce an exportable surplus. The great agricultural countries, formerly greatest importers of manufactured goods, are now most zealous in pushing industrialization. Some day they will be self-sufficient. Then the exporting countries will have to find some other outlet for the products of their spindles and looms.

There are still a few primitive areas in which the standard of living in terms of yards of textiles consumed can be substantially raised. By cultivating such fields before the old-time importers of Asia and South America become self-sufficient, world trade in textiles can be extended for several more decades.

Although it is sometimes profitable to import ideas, it is better to have a flourishing domestic source. If a foreign field has a better development than we have, we must duplicate it or improve on it just to hold our own. The awareness of research directors to this situation is a good indication that American ingenuity will not fail in its responsibility to the textile industry.

The new year has opened with textile wage levels at figures that would have been termed fantastic five years ago. It is no longer a "low-wage industry," relatively or absolutely. It can compete with many other fabricating industries for skilled workers. In new plant design, worker-comfort is now a considered factor along with machine layout and materials-handling. A modern plant is incomplete unless its designers have expended the best thought available on these three elements.

The textile industry can well be proud of the achievements chronicled in this review. But it cannot permit a moment of complacency if the best of its future possibilities are to be realized.

1947 TEXTILE VOLUME Will Be Close to 1946's Good Record

HIGHLIGHTS: *Physical volume of all textiles in 1946 was 8% over 1945 and only 6% under 1942, the all-time high—Wool and rayon each recorded new highs in 1946, while cotton lagged—The 1947 prospect puts rayon up, cotton stable, and wool lagging—Most 1946 profit margins were wide, but will shrink in 1947—Free market may sustain long-term prosperity after minor readjustment expected before close of 1947.*

By SANFORD PARKER
McGraw-Hill Economic Staff

INCREASING ITS OUTPUT by a rate of 15% between the start and the end of the year, the textile industry in 1946 advanced to new peacetime highs. Poundage of all fibers consumed totaled 8% more than in 1945, 1% more than in 1941, and 6% less than in 1942, the all-time top year. Use of both rayon and wool, in fact, went to new records; only cotton consumption lagged. And at the year-end rate of output, new peaks for textiles come into sight.

Because 1947 starts so high, an overall gain for the whole year over 1946 totals can be forecast. This is so even though current high production rates bid fair to drop sometime in the next twelve months. Were current rates sustained, 1947 textile poundage would go another 8% above 1946, this time with cottons in the lead. That's a healthy cushion for 1947 volume to fall back on.

A MILD REACTION EXPECTED. The reasons for expecting a fall in activity sometime in 1947 have to do mostly with prices. Economic forecasters unhappily agree that we probably cannot jump from a price-controlled to a free-market economy without some mild and temporary reaction. Whether they call it a "recession," a "shakeout," or simply a "bump," they look for it this year.

The war left us a legacy of pent-up needs for durable goods like autos, but the postwar strikes held up their production. So instead, the nation overindulged in an orgy of spending on "soft' goods—food, clothing, and the like. A shift from an overblown boom in light goods to a boom in heavy goods was called for. The difficulties built up by the pressure of inflation, the inanties of price control, and finally the effects of decontrol are proving too much for us to take the shift in stride. From now on, we are afflicted by distorted production, swollen inventories, excessive prices, and a second round of labor demands.

Farm products, housing, and two or three other areas of business are among the places where economists look for trouble. "Trouble," in the form of reduced employment and payrolls around the nation, would spell reduced markets and reduced activity for textiles.

But the anatomy of the expected recession, laid bare in department store statistics, more directly suggests forthcoming textile troubles. Measured in dollar value, stores have built up stocks one-half larger than a year ago, but sales have been running only one-fifth ahead of last year; consequently store buyers have cut outstanding orders in half since mid-year. The situations in individual textile lines provide perhaps the clearest examples of why business is headed for some spill this year.

Cottons, to take the most significant branch, were already declared to be "vulnerable" from a market standpoint in TEXTILE WORLD's October, 1946, analysis. The value of cotton-cloth

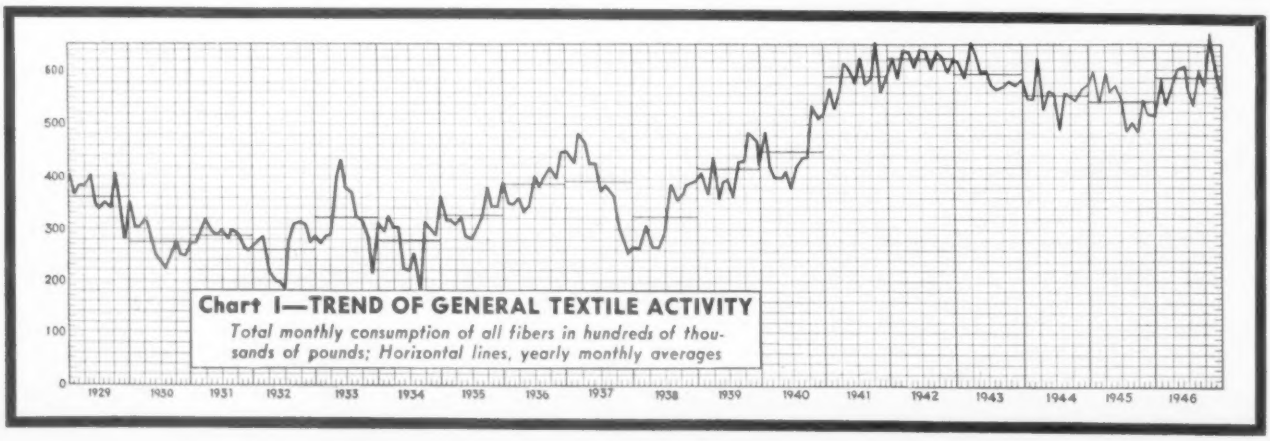


Chart 1—TREND OF GENERAL TEXTILE ACTIVITY
Total monthly consumption of all fibers in hundreds of thousands of pounds; Horizontal lines, yearly monthly averages

output had risen much further over prewar levels than had the national income, which measures the ultimate market. This reflects the artificial boom in soft goods generally, built on people's inability to buy homes and autos.

The curious divergence in raw-cotton and cotton-cloth prices in recent months further reflects the hothouse quality of current markets. Initially, textile prices were driven up by soaring raw-cotton costs. Then, however, fiber quotations dropped sharply, whereas cloth prices climbed dangerously higher after decontrol last November. They went up because of the shortage of basic "convertibles," like print cloth. Under crazy-quilt price control, mills found it more profitable to produce yardage of other types. (Chart IV). And mills had sold out for months ahead under the ceilings. Hence the current scarcity of "free" supplies of wanted constructions; hence, too, the recent frantic bidding for them and their rise in price.

Readjustments will be in order as the industry works to bring production and prices in line with free markets. Both may be expected to come down at some point in 1947. How far and how soon they will ease off depends on several questions: How much will labor permit heavy industry to produce? How quickly will consumers tighten purse strings. How speculatively will middlemen accumulate stocks?

THE COTTON SITUATION. Last October's break in raw cotton leaves considerable leeway for cloth prices to move down—a margin of almost 5¢ a pound as of year-end quotations. On the other hand, any decline will be limited by a federal floor for raw cotton at 92½% of parity, or around 25¢ a pound, thus forestalling any repetition of the 1920 collapse when prices dropped by one half. Hence a 10 to 15% cloth price readjustment seems a conservative prospect for 1947.

Such a price correction would go far toward getting cotton cloth back in line with its markets—assuming that business generally does not take a deep nose dive. Probably, cheaper prices cannot be bought except at the expense of some cutting of production, yet, that should not prove too severe, unless all 1947 economic events suddenly sour.

Two supports will lend continued strength to cotton-cloth output: One is a war-built backlog of U. S. textile needs equal to a half year's production, and the other is a foreign market shorn of half its prewar cloth supply.

TEXTILE WORLD
Textile Mill Activity Index

1923-25 average = 100

1929	115	1938	103
1930	89	1939	132
1931	93	1940	142
1932	83	1941	188
1933	104	1942	198
1934	90	1943	189
1935	105	1944	177
1936	124	1945	173
1937	125	1946	187

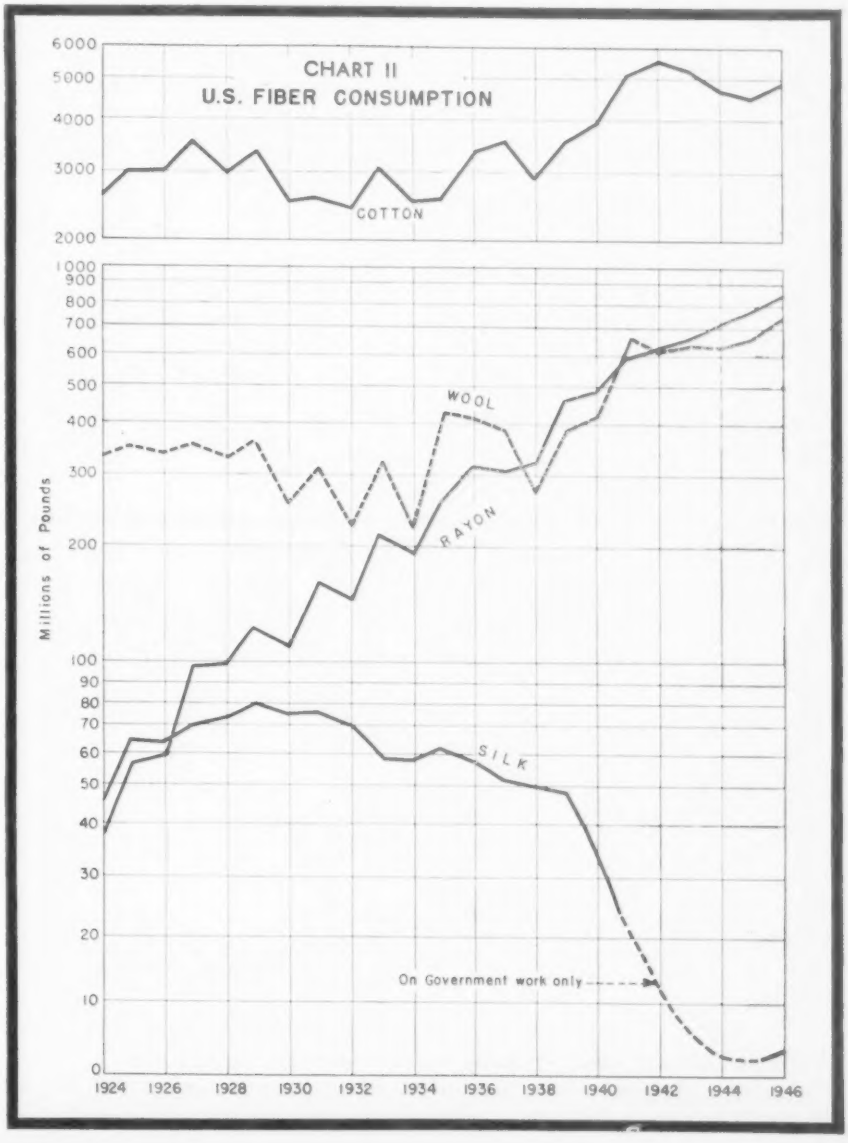
The domestic inventory backlog may now be partly made up, and world output is on the rise (see page 106); so it's easy to make too much of either backlog or exports taken singly. Yet, together the two should help hold yardage output within the 1940-1941 range where it stands today.

The following table summarizes the recent record in raw cotton used and cotton fabrics made:

	Cotton Consumption (millions of bales)	Cloth Production (billions of yards)
1939	7.26	8.32
1940	7.90	9.08
1941	10.37	10.32
1942	11.27	11.20
1943	10.53	10.60
1944	9.57	9.60
1945	9.02	8.72
1946	9.76	9.16

READJUSTMENT IN WOOL. Less doubt about a forthcoming production readjustment attaches to the woolen and worsted branch of textiles than to cottons. In 1946, it reached new records, one-fifth higher than 1945 in yardage and one-sixth higher in poundage.

The upsurge in production of woolens for women's wear (Chart V), favored by price ceilings, makes one of the sharpest instances of postwar



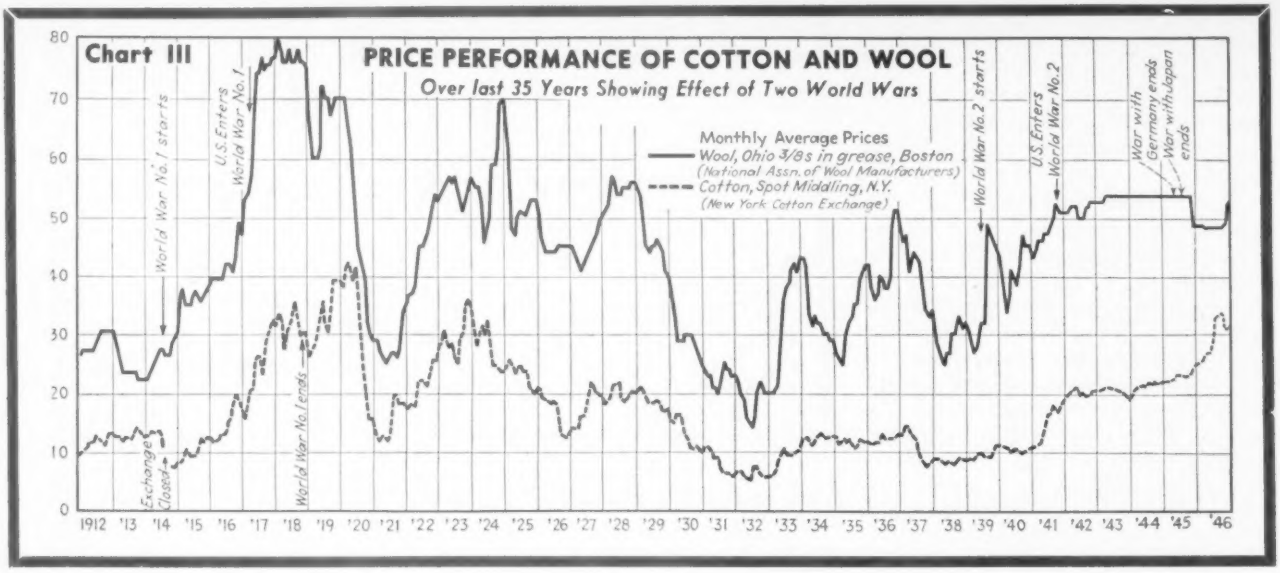


Chart III
PRICE PERFORMANCE OF COTTON AND WOOL
Over last 35 Years Showing Effect of Two World Wars
Monthly Average Prices
Wool, Ohio 3/8s in grease, Boston
(National Assn. of Wool Manufacturers)
Cotton, Spot Middling, N.Y.
(New York Cotton Exchange)
World War No.1 starts
U.S. Enters World War No.1
Exchanges Closed
World War No.1 ends
World War No.2 starts
U.S. Enters World War No.2
War with Germany ends
War with Japan ends
80
70
60
50
40
30
20
10
0
1912 '13 '14 '15 '16 '17 '18 '19 '20 '21 '22 '23 '24 '25 '26 '27 '28 '29 '30 '31 '32 '33 '34 '35 '36 '37 '38 '39 '40 '41 '42 '43 '44 '45 '46

distortion: 1946 almost doubled 1941 volume. Consumer spending on women's apparel in 1946 ran one-half larger than would be normal even at current high incomes. That pace of both output and spending was too fast to hold and the resultant glut in that branch of the clothing market is already evident. Considerable 1947 retrenchment is inevitable.

Men's-wear fabrics, of course, hold stronger positions. The backlog of ex-servicemen's need was much bigger to start, and production has been slower to rise. But soon it will be too late to shift from women's to men's wear—so strength in the latter branch will hardly offset weakness in women's wear.

Among wool lines for the home, blankets and carpets afford a similar contrast. Signs of overproduction already are beginning to pop their heads out from under the piles of blankets that have been made in the recent past. But carpet looms were only recently fully reconverted from war tasks, and 1946 dollar volume barely topped 1941. With the floors of a million new homes expected to require covering in 1947, in addition to replacement needs built up in the war years, sustained carpet activity for some time seems in store.

Price, at least in part, lies back of every readjustment. But in the case of wool, the trouble rests less at the textile level and much more with the garment makers. Including the small fillip at 1946's year-end, the industry's wholesale prices average only 40% above 1939, 25% above 1941. In cottons, in contrast, the comparable price jumps were 170% and 90%. Style changes proved an effective means of escape from price control for wool-apparel makers, and retail prices soared: one clue is the 125% rise in hourly pay of women's clothing workers since 1941. All this means that corrective price changes for wool products are less to be looked for from fabric makers than from fabric users; reduced production will weigh down on wool-textile pricing, but that alone will not regain markets. Federal farm commitments will hold raw wool near where it is.

It would not be surprising, then, to see wool-use retreat as much as a quarter at the low point of its ultimate recession. On the balance for the whole year, that could still leave 1947

Chart IV—COTTON
Woven Broad Goods
Production by Quarters

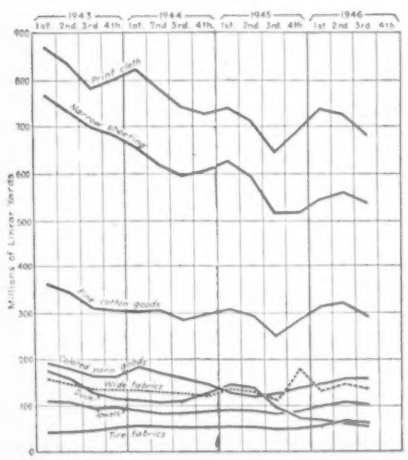


Chart V—WOOLEN & WORSTED
Woven Goods
Production by Quarters

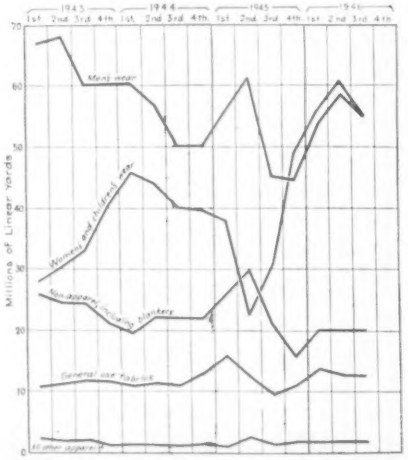
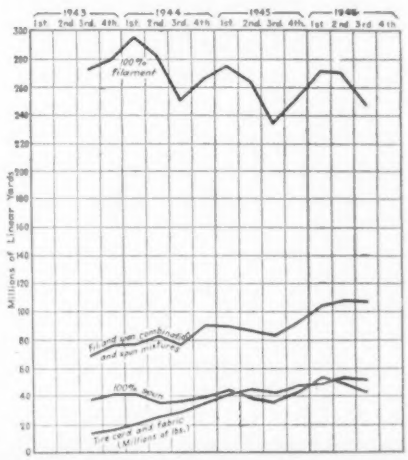


Chart VI—RAYON
Woven Broad Goods
Production by Quarters



second only to 1946, or on a par with 1941 and 1945, which two years are now tied for second place.

NEW RAYON RECORD AHEAD. Rayon should again boast the brightest record in 1947, as in the past. Persistently, volume of use has been restricted only by output capacity. New plants to provide more yarn should come into operation this year, so use should rise. The 1946 poundage was up almost 10% from 1945 to another all-time high.

Competitive pricing is, for the first time, now one of rayon's fortes. Rayon cost less than cotton at the 1946 year-end. This was true even after rayon rose in price following decontrol and cotton fell from its earlier high.

Price relationships should help rayon in the tire field, where it otherwise might be slated for some 1947 shrinkage. Most existing autos already were reoutfitted in 1946; and less output by the rubber industry, though relatively greater use by it of rayon, is in sight this year.

Tires have absorbed most of the 40% gain in rayon poundage over 1941. They left room for only a 5% advance for 1946 over prewar in yardage output of rayon broad-woven goods. Despite the pricing troubles already plain in the dress industry, apparel markets should be safe for that much rayon fabric.

Rayon fabric prices, however, are a good bet to come down somewhat, before the end of 1947. Available quotations, which indicate about a 40% rise since 1941, considerably understate the known inflation in most rayon cloths.

Rayon's "competitors," silk and

(Continued on page 220)

MILL PURCHASES

Reach New High Level

HIGHLIGHTS: *Money expended by mills for equipment and supplies up 84 points—About half due to higher prices—Volume expected to be held for 1947 if no general recession—Higher labor costs promote mechanization—Depreciation reserves being spent for improvements.*

By C. W. BENDIGO
Editor, TEXTILE WORLD

DOLLAR VOLUME of purchases of equipment and supplies by textile mills reached a new high in 1946, and there is a good possibility that the volume this year can equal it. Only an appreciable falling off of business in general and cancellation by mills of commitments to buy would seriously affect the picture for 1947.

TEXTILE WORLD's index figure for 1946 (see right) has reached a new high at 244, which means that the dollar volume of machinery, equipment, and supplies is almost two and a half times greater than that in 1929. Since 1932, the trend has been constantly up—at first steadily but, more lately, very erratically, largely because of the war. The forced dip in the volume of purchases during the war resulted in an accumulation of demand that is still far from satisfied.

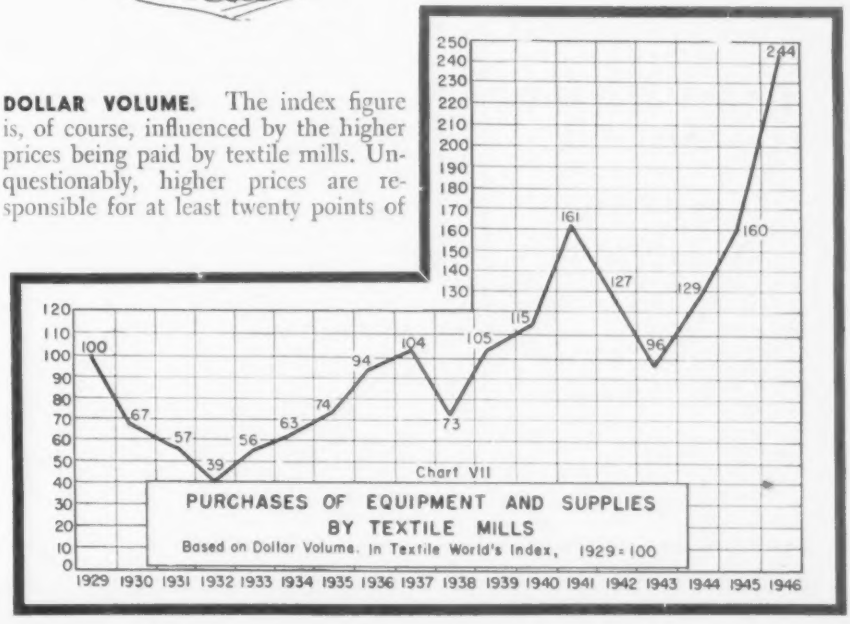
DOLLAR VOLUME. The index figure is, of course, influenced by the higher prices being paid by textile mills. Unquestionably, higher prices are responsible for at least twenty points of the rise in dollar volume. That is to say, increases in the number of units bought by mills have not been so great as the total amount of money expended.

It is quite clear that in 1947 there will be an appreciable increase in the number of units of items that textile mills can buy. It is not quite so clear whether or not there will be further increases in the prices mills must pay.

Many supplies that were short last year—such as those depending upon availability of oils, sheet steel, motors, and other scarce materials—continue to be hard to get; but shortages of materials due to reconversion of suppliers' plants and building up of personnel are being alleviated. In fact, as volume of some items builds up, demand for a few may fall off. In the main, however, mill owners are even more anxious now than ever to reequip and modernize their plants.

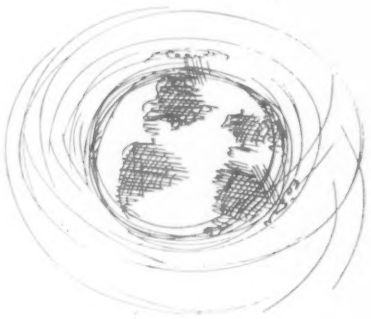
Mill earnings last year reached a new all-time high. Funds were available for purchases; and, generally, mill executives have seen the folly of juggling depreciation-reserve bookkeeping. Now, more often than formerly, reserves are being used for mill improvements rather than paid out as dividends.

Many of the purchases of equipment by mills are made to take advantage of technological advancements and to assist in overcoming the shortage in and inefficiency of labor. The sweep to increase mechanization is unmistakable. As labor becomes more expensive, the amount of capital investment per employee increases. A new balance between investment in machinery and labor costs has not yet been reached.



TEXTILE PRODUCTION Is On Rise All Over the World

HIGHLIGHTS: *Old textile producers are getting back into stride—Agricultural countries pick textiles in first step toward industrialization—Trend is for more goods to export and fewer markets to which to sell—Raw materials and supplies are a current problem — Enemy nations have planned economies.*



ALTHOUGH THE UNITED STATES is the first country of the world today in the production of textiles, there are three or four countries within striking distance. The urge to industrialize is widespread and many nations are setting out to establish industries that will satisfy domestic needs and leave an exportable balance. The dilemma is that as this movement materializes the market for exportable surplus dwindles.

It may be fruitful to look over the present status of our most important competitors and customers and to read a little about their plans and prospects. This roundup of the textile situation in 15 foreign nations was prepared through the cooperation of the correspondents of McGraw-Hill World News located in these various centers. The data in the table on page 109 is drawn largely from their reports.

NORTH & SOUTH AMERICA

CANADA

By J. F. FLAHERTY

Prospects are for increased production in all lines of Canadian textiles in 1947, if there are adequate raw-material supplies and stable labor conditions. Cotton spinning and weaving mills are currently suffering from difficulty in obtaining raw material.

Long-range prospects of the industry are beclouded by uncertainty about governmental tariff policy. The industry is dependent on the domestic market which it has to share with outside competitors according to the degree of protection afforded. Tariff reductions on the ITO pattern are not expected to open up export opportunities to Canadian mills comparable with the access to the limited Canadian market which will be afforded foreign producers.

Over the years 1939 to 1946, the low production point was in 1939 for all major classifications. The high in cotton yarn and cotton cloth production was 1942; and for rayon fabrics, wool yarns, and wool goods, 1946. Current imports of cotton goods are 77% of domestic production; of wool goods, 45%. Imports of cotton and wool yarns are relatively small, and exports of textiles generally are inconsequential.

Loom installation by Canadian woolcloth and blanket mills in 1946 numbered 2,749 units, and manufacturers' current plans call for installation of 215 additional looms.

As of November, 1946, there were 25,812 worsted spinning spindles installed and 10,040 additional to be installed. Bradford spinning spindles installed in November, 1946, numbered 89,060 with 12,980 to be installed.

As of the end of 1946, the industry was under control both as to prices and production. Upward adjustments of prices on cotton goods were authorized during 1946, but operation within the price ceiling remained possible only by reason of an import subsidy on raw cotton.

MEXICO

By ERNEST HEDIGER

Mexico is producing over half-a-billion yards of cotton goods annually. Wool and rayon fabric productions are relatively small items. Wool fabric production is expected to increase during 1947, when imports of Argentine and Australian raw wool become easier. Rayon cloth production and imports were higher in 1946 than ever before; but imports are expected to decline toward the end of 1947, when the large Celanese Mexicana and Viscosa de Mexico mills, now under construction, will be fully producing.

While textiles remain in large demand all over the world, foreign competition will not be strongly felt in Mexico. Exports of Mexican cotton manufactures may actually increase during 1947, as manufacturers are asking for freedom from government restrictions on such operations.

Little new equipment was installed in existing mills in Mexico during 1946 due in part to the difficulty of getting up-to-date machinery; and, to a lesser extent, to the fact that textile workers, while not opposing modernization, are asking that no workers be dropped in case of mechanization of the industry on a large scale.

Two pilot plants, equipped with modern machinery, were built during 1946. One is a 200-loom cotton-weaving plant located at Hermosillo, Sonora, and set up by Mexican interests; the other is a 75-loom rayon plant built at Cuernavaca, Morelos, by United States and Mexican capital.

The general situation of the industry is now being studied by a joint commission on modernization, composed of 14 representatives of mill owners, 14 workers' representatives, and two government representatives. It is studying the conclusions of the special textile mission which visited the United States last year. The commission favors a progressive modernization, with sufficient guarantees of jobs to the workers.

BRAZIL

By CONRAD WRZOS

Brazil's textile industry has experienced great expansion during the war years. From 1939, cotton goods gained 18% to 1,049,308,000 meters in 1946; and wool goods jumped nearly 100% to about 13,000,000 meters over the same period. For the most part, fabric imports have been relatively small, not exceeding 1% of the domestic production.

Brazil's exportation of cotton goods has moved forward rapidly from 19,800,000 meters in 1939 to 242,460,000 meters in 1945. This accounts for 22% of the domestic production in that latter year, whereas in 1939 it was only 2%. Excellent export sales of raw cotton were made during the first three months of 1946, due chiefly to the return of old prewar markets, like China, which took 59% of the export volume, and Italy with 8%. Great Britain's purchases amounted to 18%, and those of Spain reached 9%. Brazil's raw cotton crop in 1945 amounted to 350,640 tons, of which about 50% was exported.

ARGENTINA

By E. G. MALEY

The textile industry of the Argentine includes some 500 mills. Current figures are not at hand; but those for 1939 indicate 99 mills in cotton spinning and weaving, 241 in silk and rayon, and 112 in wool and miscellaneous fibers.

Rayon-yarn manufacture was begun in 1936, and by 1946 there was an annual production of 4,700,000 kilos, of which 300,000 were acetate. Rayon imports in recent years came principally from Great Britain. Imports of staple fiber are likely to dwindle because of the expansion of local facilities which are now under way and which will more than double the 1946 production.

Imports of rayon piece goods—which came previously from Germany, France, and Italy—have been well maintained in volume and come chiefly from Brazil, the U. S., United Kingdom, and Switzerland.

Production in cotton manufacturing has showed a sharp increase from prewar levels. Cotton-yarn production is estimated at about 140,000,000 lb. in 1946, with the same or more for 1947, against prewar output of 64,000,000 lb. in 1939. Cotton-cloth production has just about doubled in volume since 1939.

ASIA

CHINA

By A. W. JESSUP

China's commercial production of cotton cloth for 1946, set at 720,000,000 sq. yd., is said to be only about half of the yardage now being made in that country as the peasant home industry is believed to have turned out about the same quantity. It is estimated that for 1947 commercial production will increase to 1,200,000,000 sq. yd. Cotton yarn production in 1946 was 450,000,000 lb. and is expected to double to 950,000,000 lb. in 1947. Actually there are said to be 4,300,000 spindles in all China, though only 3,000,000 are reported as operating in 1946. Of China's 61,340 looms, only one-half operated through 1946; and the 1947 cloth estimate is based on restoration to service of 20,000 more or a total of 50,000.

Over one-third of all the 1947 imports into China will be for the benefit of the cotton division of its textile industry. The contemplated imports, which total $600,000,000, will include $200,000,000 in raw cotton, textile machinery, spare parts, dyes, chemicals, etc.

A government owned and operated company controls 1,655,000 spindles and 34,437 looms. The private mill owners have some apprehension over this situation, but are going ahead to buy spinning machinery for expansion; 60% of these orders are going to the U. S., and the balance to Great Britain and Switzerland.

China's wool mills are also planning expansion. The 1947 figure of 5,000,000 pounds of woolen yarn will be upped to 5,800,000 in 1947; the 2,900,000 square yards of wool goods in 1946 will be upped to 4,100,000. Most of this is made from imported wool as China's own wool clip is used chiefly for carpets.

Raw silk to the amount of 3,500,000 pounds was produced in 1946, and the 1947 production is estimated at 5,000,000 pounds. Silk fabrics, amounting to 10,000,000 sq. yd. in 1946, are expected to reach 15,000,000 in 1947. The condition of world markets for silk has been disappointing to those who had hoped for large silk exports. However, the government is subsidizing export of about 1,500,000 lb. of raw silk and is hopeful that a self-sustaining trade can be fostered.

INDIA

By J. K. VAN DENBURG, JR.

In India, where cotton is king of the textile industry despite the magnitude of local jute production, a doldrum period has set in. Cotton goods production for 1946 is estimated as 4,100,000,000 sq. yd., which is 18% under the wartime peak. With home production from India's 1,400,000 hand looms, this means about 15 yd. per capita compared with the basic requirement which has been figured as 25 yd. The production lag is partly due to the fact that India has dropped the working week from 48 to 40 hr. and that the industry has been hampered by strikes.

India's textile program, aided by a new local textile-machinery plant designed to reduce her dependence on imports of such items, calls for considerable plant expansion. Sights have been set for a production of 7,200,000,000 yd. of cottons by 1951. This requires installation of 2,750,000 additional spindles and replacement of 80% of the 10,000,000 spindles now operating in 417 cotton mills. It is an ambitious program.

Rayon is a new industry for India, and in the last six months, three plants have been started, all to go into production in 1948, and two or three more plants are in the discussion state. Production of each of the first three is estimated at 6,000,000 lb. annually. Imports of rayons for 1945-6 totaled 2,941,000 yd. of piece goods and 1,790,000 lb. of yarn.

Consumption of wool in India's 40 wool mills is set at 11,340,000 lb. in 1946-7. Despite a long-established domestic use of silk, only 1,000,000 lb. was consumed in local mills in 1946.

Dyeing and finishing of textiles is in need of expansion and modernization. This is now being planned. It is also hoped to have a going dyestuffs industry before many years.

The jute and burlap production has been active during the war and postwar period. The government has aided the situation by allocating quantities for the various export destinations. It has also set prices, a policy variously regarded as an aid or a hindrance. Controls are approaching the time for relaxation.

JAPAN

By THEODORE COHEN

The postwar Japanese textile industry is an enigma to most of the world. American military authorities are now calculating on the extent to which Japan will be allowed to rebuild that industry. One military spokesman visualizes Japan's cotton goods industry as properly a market for about 2,000,000 bales of cotton annually. Of Japan's 13,000,000 prewar cotton spindles, about 3,000,000 are in place with 2,500,000 operable. By the end of 1947, it is figured 3,700,000 will be in place and operable. This may give a consumption of between 1,000,000 and 1,500,000 bales of cotton. By the end of 1947, yarn production should be 50,000,000 lb. per month.

The Japanese rayon industry is recovering slowly from shortages of pulp and caustic soda. It is reported that a quarterly production of 14,200,000 lb. was provided for at the end of 1946 with about a 30% increase in 1947. A goal of 100,000,000 lb. production each for filament and staple, or a total of 200,000,000 lb., is set for 1948. Of this total, Japan expects to export one-third of the staple and one-half of the filament. Additional exports of these materials in the form of woven fabrics are planned.

Japan's worsted-yarn production for 1946 is placed at 3,000,000 lb. against a 1939 figure of 60,000,000; and her woolen yarn production is 10,800,000 lb. against 62,400,000. Fabric production in mid-1946 ranged from 1,900,000 to 2,700,000 sq. yd. monthly.

Raw-silk production has met difficulties, particularly the inadequate mulberry acreage and the low capacity of local silk-conditioning houses. Judging by the sluggishness of American acceptance of silk at government prices, the tardiness of recovery in Japan is helpful. The Japanese silk supply for 1946 is estimated at 130,000 bales. This may be high, as it includes stocks which were placed at about 50,000 bales. Actually only 17,388 bales of export grades were produced in the first four months of 1946. If the 1946 production does reach 80,000 bales, it will be about 11% of the 1939 and 1940 production figures.

EUROPE

UNITED KINGDOM

By HOWARD WHIDDEN

Among the broad groups of textiles, only in woven-rayon fabrics has the United Kingdom been able to better its wartime production records in the first peacetime year. Wool goods are not officially estimated for 1946; but based on 1945 figures, production was probably slightly less than the wartime peak of 1942. Cotton goods, however, have fallen far behind, since 1946 production is one third less than the war peak of 1941.

It has probably been the British aim to

use its scant man-power to produce as large an amount of fabrics from Empire-grown raw materials as possible. This has stimulated rayons, which are largely home-produced; and wool goods, most of the raw material for which comes from within the Empire. Cotton still comes chiefly from the United States despite successful crops in the East African colonies and Egypt.

Figures comparing the wartime peak with 1946 tell the story: cotton yarns, 1941, 821,000,000 lb., off 26% to 647,000,000; cotton goods, 1941, 2,147,000,000 yd., off 34% to 1,596,000,000; worsted yarns, 1942, 152,000,000 lb., off 17% to 130,000,000 (est.); wool goods, 1942, 236,000,000 yd., off 12% to 210,000,000 (est.); rayon staple, up 15% from 61,000,000 lb. in 1939 (war years not given) to 70,800,000; rayon filament, off 13% from 120,000,000 lb. in 1939 to 106,800,000; rayon fabric, 1941, 301,000,000 yd., up 12% to 338,000,000.

Export figures for 1946, based on the first ten months, indicate that the following percentages of Britain's domestic production for that year has been shipped overseas: cotton yarn 3%, cotton goods 32%, worsted yarn 10%, wool fabrics 34%, rayon 14%, rayon fabrics 29%. An interesting feature of Britain's export figures over the war years is their steady maintenance of quantities. Although lower in all cases than 1939 except for rayon and rayon goods, they compare favorably with the first full peacetime year, 1946.

FRANCE

By MICHAEL MARSH

Textiles are not among the six major industries on which the French plan for economic recovery is to be based, but they are nevertheless an important part of French manufacturing industry. Their importance lies partly in the need for the restoration of clothing supplies in the country and partly in the contribution which they can make to French export trade.

Before the war, France had 9,500,000 spindles and 187,000 looms. There are left after the war 8,500,000 spindles and 160,000 looms. However, in January, 1945, there were only 180,000 spindles and 11,152 looms active. By August 1946, activity had risen to 5,000,000 spindles and 93,000 looms. This machinery is ripe for modernization, as it is said that 56% of the spindles and 58% of the looms date back before 1919.

Coal and electric current are in very short supply; the mills have insufficient funds to finance re-equipment; and the labor force, especially of skilled workers, is inadequate. The difficulty as regards power supply will no doubt be overcome in due course, but the other two problems are likely to persist longer.

As the necessity exists for the textile industry to renew its machinery and to modernize its methods, five lines of progress have been specified by the authorities: standardization of products, specialization of plants, merger of enterprises, double-shift operation, and development of research.

Rayon output in France during the war was maintained on a high level, and 1942 figures were above 1938. It is now reported that this production was chiefly for French domestic consumption and not much was taken out by the Germans. The falling-off in rayon since the war has been partly influenced by consumer preference for natural fibers. Rayon is said to be widely regarded in France as "ersatz" and "German."

ITALY

By DIEGO STRANIERO

Italy, which in prewar years gave precedence only to Great Britain and Japan as an exporter of textiles, is making a good recovery in most fabric lines, since war damage to the textile industry was relatively slight. The cotton branch was quickest to recover, the only general problem here being supplies of raw materials. Spinning mills have almost attained their prewar production, being only 16% below 1939; weaving mills in 1946 were lagging somewhat at about half prewar production.

In wool products, the situation is somewhat similar, with yarns in 1946 only 17% behind prewar production while piece goods were 55% behind. Most of the current business is for British, Swedish, and Swiss accounts, based on raw materials brought in under government sponsorship.

Productive capacity of the Italian rayon industry is placed at over 450,000,000 lb. which is about the 1942 production. However, scarcity of raw materials and coal renders actual production far short of this. Production in 1945 was only 6,260,000 lb., and in 1946 it is estimated 97,180,000 lb. has been turned out. Further improvement may boost the productive rate by mid-1947 to about 250,000,000 lb.

Raw silk production in 1946 came to 4,800,000 lb., which is only about 10% below the 1939 production and practically twice the 1945 output. Silk-weaving plants are working at maximum, and both raw and woven silk are playing an important part in Italy's exports.

Hemp production in 1946 was half of 1939, while flax was on a par with the prewar year. Italy is working on the chemical "cottonization" of hemp, so that not only the old-line mills but also cotton mills as well are potential customers of this new type of raw material.

HOLLAND

By J. H. C. STUART

Holland's textile industry is well on its way to recovery. Production of wool cloth and blankets in 1946 actually exceeded that for 1938-39, but some other items were still substantially below prewar figures. The principal factors said to be retarding full recovery are the government's policy of setting aside part of the production for export in order to maintain the country's dollar position, the prolonged coal shortage, the lack of skilled textile labor, and the fact that nearly all textile raw materials (except flax) must be imported. New textile machinery is being imported from Great Britain and Switzerland. Rayon plants are making good recovery with the AKU plant at Ede producing 75% of its prewar capacity.

SWITZERLAND

By ARNOLD SAGALYN

Production of cotton yarn in Switzerland in 1946 is estimated at about 46,000,000 lb. against a prewar average of 53,000,000. The 1947 output will, no doubt, be larger than 1946 as labor and raw material situations improve. Similarly, cotton cloth production was about 50% greater in 1946 than the average year immediately prewar and should continue to gain.

Silk-fabric production remains important, although current figures are not at hand. Production was fairly well maintained through the war period—first, until Russia became involved, mills received imports of Japanese silk overland via Russia; and, later, Switzerland obtained imports from Italy until that country itself became a theater of war. Switzerland is the principal source of silk bolting cloth, and silk lace is an important product.

All branches of the textile industry are represented in Switzerland. Mills feature fineness and quality of workmanship. Embroidery is so well done that many nations customarily have sent piece goods to Switzerland for embroidering and re-exporting. The Swiss textile industry has long been active in establishing plants in other countries. It is said that in 1912 the total number of looms operated by Swiss companies in other countries exceeded those operated in Switzerland itself.

CZECHOSLOVAKIA

By FRANK E. FRANK

For the first eight months of 1946, the value of cotton imports amounted to just under 400,000,000 Czech crowns, as compared with imports of 1,024,500,000 Czech crowns for the whole of 1937. This decline has been even more strongly pronounced in raw-wool imports, which fell from nearly 800,000,000 to 124,500,000 crowns. The purchasing power of the Czech crown represents at present only about one-third of the pre-war amount, so the reduction is further magnified.

The target set for textile production by the Czechoslovak two-year plan, which was due to be started at the beginning of 1946, is an ambitious one. The quantities which it is planned to produce in 1948 include 6,800 tons of rayon, 58,200 tons of cotton yarns, 50,200 tons of cotton and cotton-and-rayon fabrics, 14,800 tons of wool fabrics, 9,500 tons of linen fabrics, 9,800 tons of frame-knitted goods, and 55,200,000 pr. of stockings and socks.

Exports of textiles and clothing are planned to reach an annual value of be-

WORLD TEXTILE POSITION

	NORTH & SOUTH AMERICA					ASIA			EUROPE						
	U. S.	Canada	Mexico	Brazil	Argentina	China	India	Japan	U. K.	France	Italy	Russia	Holland	Switzerland	Australia
COTTON YARN															
Spindles (mil.)	24.0	1.9	1.0	3.0	0.3	3.0	10.0	2.5	34.7	5.0	5.0	10.4	1.2	1.3	0.2
Production (mil. lb.)	867	163			72	450		92	648	136	210	500	95	46	29
Imports (mil. lb.)	1.8	7.5			7.0	—	—		0.5		—	—		—	80*
Exports (mil. lb.)	13.5	—		3.0		—	18		19		12	—	19	—	—
COTTON CLOTH															
Looms (thous.)	459	24	34	97	6	60	202	177	493	93	130	250	51	21	
Production (mil. yd.)	8848	260	566	1196	44†	720*	4100*	100	1596	209†	160†	1780		44†	21*
Imports (mil. yd.)	48	200		2		65	3*		9		—	—		—	70*
Exports (mil. yd.)	725	15	125	264		—	440*		516		13†	—		1†	—
WOOL YARN															
Spindles (thous.)	3550	114			107		70				1261				386
Production (mil. lb.)	936	82				5		26	127	84	95				32
Imports (mil. lb.)	1.0	4.0				0.4	—		1.5			—			—
Exports (mil. lb.)	3.0	—		—	0.8	—			13.5		1.2	—			
WOOL CLOTH			91												
Looms (thous.)	47.6	2.7			3.0		2.0				19.0	2.5			4.8
Production (mil. yd.)	595	27		14		3	11†	23	225	101†	55†	56	3		31.5
Imports (mil. yd.)	2.0*	12.0		—		3.5	1.0†		5.5		—	—			3.0*
Exports (mil. yd.)	23.2	—			5.3†	—	—		72.0		5.5†	—	—		4.0*
SYNTHETICS (Filament)															
Production (mil. lb.)	667	25.6	—	20	10	0	0	9	107	68	65	10	4	14	0
Imports (mil. lb.)	30§	7			2		2		—		—	—			
Exports (mil. lb.)	28				—		0	3.0	15.6		13.5§	—		1.5	0
SYNTHETICS (Staple)															
Production (mil. lb.)	174	—	0	2	1	0	0	21	71	40	32	5		21	0
Imports (mil. lb.)	—	7.9			—				—		—	—			
Exports (mil. lb.)	5	—	0		—	0	0					—		—	0
WOVEN SYNTHETICS															
Production (mil. yd.)	1728	85		14†	44			63	338	40†		34			31*
Imports (mil. yd.)	—	12					3		—						
Exports (mil. yd.)	69.0	3.0						4.5	98.4						

* Square Yards. † Pounds (other cloth figures are linear yards). § Includes staple fiber. — Means negligible.

THIS TABLE is based upon the most recent data available, received for the largest part since Jan. 1 from McGraw-Hill World News correspondents in the principal countries of the world. For various reasons peculiar to the diverse habits of different countries on the matter of statistics, these data originally came to hand in unrelated units—for example, piece goods figures are reported in linear yards, square yards, meters, pounds and kilograms. The metric units have been converted to English units and effort has been made to indicate by footnote where other than the American custom is followed.

Amounts less than 100,000 in pounds or yards or less than 1,000 in spindles or looms are not reported. For the most part, the figures are for 1946. In some instances, they are estimates based on reports for a portion of that year; in others, they represent the latest year for which data could be obtained. The data from some countries were confusing in that two different figures were given from different sources for the same item; in these few cases, an average of the available figures has been used.

For most of the countries, TEXTILE WORLD has received much more complete data than there was room to publish. The editors believe that this condensed tabulation serves for best use of the available space. In several cases data going back to 1937 or 1938 is available, and the editors would be glad to send copies of what is at hand on particular countries if readers will write their request to TEXTILE WORLD, 330 W. 42nd St., New York 18, N. Y.

tween 4,000,000,000 and 5,000,000,000 crowns. Figures of actual exports for recent months are not yet available; but it appears that the value rose from 16,000,000 crowns in January, 1945, to 100,000,000 crowns in June, and that the total for the first half of 1945 was 266,000,000.

RUSSIA

By ROBERT MAGIDOFF

Russia's textile industry suffered severely in the war with loss or bad damage to 400 mills. This eliminated 1,600,000 spindles and 26,900 looms in the cotton branch and 85,600 spindles and 2,100 looms in the wool branch. By January, 1947, 140 of these mills were fully or partly restored; during the war, 30 new plants were erected. At present rate of rebuilding, prewar textile production should be regained by the end of 1948.

The 5-year plan, culminating in 1950, sets a production goal for all fabrics at 5,500,000,000 yd. or about three times the 1945 production. The plan involves installation of 2,400,000 new spindles and 50,000 new automatic looms. Number of workers in the textile industry will be upped by 450,000 in the 5-year period. Production per worker at the end of the period will be 27% over the 1940 rate and 61% over 1945. A special drive for improved housing will raise the standard of living among these workers.

Production of textile-machinery is getting special attention, and present construction is directed to single-process picking, long-draft frames, large packages, automatic winding, and high-speed warpers. Output of machinery will be upped 4-fold in the five years with an output of 3,300,000 spindles and 63,000 looms.

Cotton goods is the big division of the Russian textile field with a 5,100,000,000 yd. production planned for 1950, or 93% of the total yardage of all fibers. The plan involves 1,892,000 new spindles and 33,300 new looms. Of the yardage expected, one-third will be produced by the Ivanovo mills in Central Russia. By 1950, production of woolens will be 170,000,000 yd. and of rayon and silk 150,000,000 yd. As 45 to 60% of the machinery in the wool mills is over 50 years old, there will be large new installations in that branch. Five new rayon mills are planned which will have 200,000,000 lb. of new capacity. This is 56 times the 1945 production. Linen-fabric production will be three times 1945 size, and flax production by 1950 will be 800,000 tons.

THE ISLAND CONTINENT

AUSTRALIA

By HERBERT LEOPOLD

Australia's textile industry made excellent production records during the war due to two- and three-shift operation of

(Continued on page 224)

WASHINGTON RELATIONSHIPS

With Textiles Have Been Simplified

HIGHLIGHTS: *Controls have been reduced, simplified, and consolidated —Moves to facilitate general exportation meet criticism—Textile mill labor supply has increased to reasonably satisfactory point—Export of textile machinery estimated at about 10% of production.*

By JOHN HIGHTOWER
McGraw-Hill Washington Staff

TEXTILE SPECIALISTS in government agencies in Washington see, in general, a decided improvement in textile manufactures this year; although many basic fabrics, such as combed broadcloth for shirts, are expected to continue in short supply for a few months. Officials look back to important changes last year as indicative of better conditions in the future.

CONTROLS REDUCED. The number of government controls over textiles and related commodities was greatly reduced in 1946. By the middle of last month, CPA's textile orders had dwindled to the general order, M-328 (amended) and M-84 (allocation of agave fiber and specification of end use of agave fiber and manila spinnable fiber). Also thrown overboard, in January, was CPA's priorities regulation 28-A (assignment of CC ratings for procurement of yarns and fabrics). However, ratings for these materials were still possible through PR-28, although under narrowed conditions. A few weeks ago, the War Department had abandoned its use of MM preference ratings. At that time, the Navy had not followed suit, but was using the ratings sparingly.

In cleaning out virtually the last of its textile orders last month, CPA revoked M-317 (distribution of cotton fabrics and sale yarn), M-317A (cotton fabric set-asides for certain uses), and M-391 (channeling of certain rayons into suit linings). As amended, M-328 has taken over the rating ceilings on cotton from M-317A and the rating ceilings on rayon from M-391. CPA has specified in M-328 that it will not issue any unpublished directions affecting the production and distribution of textiles and related commodities except in cases of public emergency.

FOREIGN TRADE FACILITATED. Like those of CPA, controls exercised by the Office of International Trade over exports were being steadily narrowed last year. An OIT official recently declared that all remaining export licenses needed for cottons might be removed in two or three months. Cotton-yarn licensing was dropped in December. Early in January, license requirements were removed for a group of cotton fabrics and apparel representing about 10% of the cottons remaining on the positive licensing list. The quota system for export of broadwoven cotton textiles remains in effect, the 1947 first-quarter quota being set at 230 million linear yards, a 30% increase over the quota in the last quarter of 1946.

Foreign trade specialists in Washington offer, naturally enough, no opinions as to what branches of the domestic textile industry may expect to find U. S. tariffs lower as a result of the unprecedented trade negotiations with 18 foreign countries scheduled to open some time in April.

LABOR SUPPLY EASES. This year should see an increasing and adequate volume of labor in Southern mills, and an easing but still rather tight situation in the mills of the Northeast. These are views of Department of Labor specialists who returned from field trips late last year.

In 1946, the Southern plants, labor investigators say, had become sufficiently staffed to meet production schedules, which, of course, were affected by OPA price controls and other limitations affecting output. Former employees began returning to mills on the lower Atlantic Coast late in 1945 after war industries farther north started curtailing operations. The movement was culminating in 1946.

On the other hand, New England mills, producing woolens and worsteds and cotton fabrics still lacked the labor they needed in 1946 because of competition from other industries in the region, and they are believed likely to continue to suffer a shortage, at least in the first quarter of 1947. The shortage, however, is expected to be progressively reduced, but not fully eliminated.

Available figures show the upward movement in nation-wide textile employment during 1946. Last October, workers in the over-all category of "textile mill products and other fiber manufactures" numbered 1,224,000 as compared with 1,057,000 in October, 1945. Between the same periods, employment in cotton manufactures, exclusive of small wares, rose from 404,300 to 459,500. In woolen and worsted manufacture, exclusive of dyeing and finishing, the increase was from 139,500 to 160,500. In rayon and silk goods, employment rose from 85,200 to 93,800.

MACHINERY EXPORTED. Department of Commerce officials have observed that machinery in the textile industry, overworked during the war and lacking normal repairs and replacements, still faces a shortage of replacement facilities that may last from three to five years more. This situation is aggravated by continuing heavy demands for American textile machinery from abroad. It is estimated that approximately 10% of domestic production is being exported, though the exports as reported include some used equipment. This ratio is not expected to drop much this year.

Textile machinery manufacturers are booked far ahead. It is believed that the expansion in output reported early last year is still proceeding. Shipments for domestic and foreign consumption, according to some estimates based on data collected for the War Production Board in recent years, are: $85 million in 1943, $115 million in 1944, $145 million in 1945, and $105 million in the first six months of 1946 (or $210 million for a whole year). The Office of International Trade requires no licenses for exports of such equipment, having discontinued its licensing in September, 1944.

Research Promises Noteworthy

FUTURE FOR TEXTILES

HIGHLIGHTS: *Need indicated for cotton-fiber research—Nylon staple in blends will be highly important—New machine developments affect many fields—Sizing and proofing chemicals under scrutiny—Research goes forward on increasing scale, but spectacular results are not likely in immediate future.*

By JULIAN F. SMITH
Institute of Textile Technology, Charlottesville, Va.

TEXTILE RESEARCH has been enormously stimulated by World War II, much as industrial chemical research was stimulated by World War I. Only time can tell whether the resulting progress in textile technology will be as spectacular in coming years as it has been in chemical technology in the last 30 years. Even now, however, there are visible effects of the stimulus to textile research, and some predictions can be made by following observable trends.

TEXTILE FIBERS. Greater activity in rayon research than in cotton research may be partly responsible for the price reversal whereby rayon became cheaper than cotton in 1946. The security of King Cotton on his throne now depends at least as much on relative abundance as on the virtues of cotton fiber. This situation sharply accentuates the need for research in the cotton-textile industry.

Synthetic fibers other than rayon are entering more and more into the textile picture, but capacity for their production is limited and their influence is more on the qualitative than the quantitative side. Nylon staple fiber was an outstanding development of 1946 in this direction. By reason of high tensile strength, low moisture absorption, and other properties, it contributes much to the quality of blends and has many potential uses in company with wool, rayon, or cotton. Artificial protein fibers, which can be made from milk, soybeans, or peanuts are also useful in a variety of blends; especially with wool, since the chemical similarity means similar dyeing behavior.

Cottonized bast fibers, developed in Europe before and during the war, are round with tapered ends. They are too smooth for high yarn strength if spun alone, but they have good fiber strength and were used effectively in many blends, especially in Germany. Flax straw was the principal source in Europe, but cottonized bast fibers can also be made from such sources as hemp and jute. American development work on flax straw and other bast fibers is largely along other lines than the European cottonizing process.

In its present state of intensified research-mindedness, the textile industry has wisely refrained from exclusive concentration on problems of immediate practical urgency. Fundamental science underlying fiber properties and fiber behavior is also being investigated. Cellulose chemistry has been actively studied during the past year, and prevailing theories of the chemical structure of the cellulose molecule are being challenged in the light of new experimental evidence. Research in fiber physics has also been active with studies of relations of individual fibers in the mass, of fiber to yarn, and of yarn to fabric. The principles of fabric geometry, which found several wartime applications, have been explored further and are being utilized in making noncurling fabrics without chemical stiffeners, in improving water resistance of apparel fabrics, and in imparting greater wear resistance.

TEXTILE MACHINERY. Mechanization in the cotton industry has gone back of the mill and the gin to the cotton field, where production costs are lowered by flame weeders early in the season and by cotton harvesters at picking time. Mechanical application of defoliating chemicals is an important factor in the success of the harvester.

In the mills, every operation from bale breaking to packaging finished fabrics is fair game for the research man. Cleaning is under investigation, both in England and in America. Swiss designers have improved speed control and tension control on spinning frames, and the latest German frames have several attachments for improved operation, including an air-suction device to replace scavenger rolls.

In rayon-yarn manufacture, the British have their Greenfield method of tow-to-top conversion without carding or combing. Recent American contributions to the design of spinning machinery have been concerned with tension control, greater speed or better uniformity in twisting, and improved performance of travelers and rings.

Weaving has received a good share of attention and loom development has extended even to Brazil where Mascarenhas has invented an electropneumatic loom. Other improvements in weaving include the Baddeley loom, a British invention which operates without a shuttle; a Swiss loom having a shuttle action which is radically different from the conventional type; the Draper high-speed loom; and the Kayloom, a hybrid machine which utilizes a shuttle but produces fabric by a combined knitting and weaving action.

There has also been considerable development work in knitting machinery. Among the outstanding results are the Aveco high-speed knitting machine in America and England's FNF machine which is a rival of the Aveco machine for speed. The Germans have a high-speed, warp-knitting machine, and have given much attention to circular interlock knitting; but their knitting technology, as a whole, is not so far advanced as the American.

CHEMICAL PROCESSING. Research in chemical processing of textiles was formerly performed largely by chemical suppliers. They are still active, but the textile industry's own research is being stepped up along this line. Developments in resin-bonding of fibers have continued, with commercial applications in tea bags, interlayers in laminated paper bags, and disposable tissues for a variety of uses. Of the many synthetic resins which are commercially available, relatively few are eminently suitable for fiber bonding; and consequently, a substantial outlay

of research effort was necessary in bringing this development to commercial production.

During the war, some of the research agencies of the armed forces were much interested in warp sizing. This interest has carried over into current research, with a number of investigations under way. Some attention has been given to gelatin sizes for warp-sizing of rayon yarns, and to starch and other materials for warp sizing of cotton yarns. Thought has also been given to the possibility of developing a composition which could be allowed to remain on the yarn, thereby eliminating the desizing operation.

For proofing fabrics against mildew and decay, there are many fungistatic and fungicidal agents which can be applied to fabrics with more or less lasting effect. An expedient which does not require the use of a toxic agent has been developed on a laboratory scale by U. S. Department of Agriculture's Southern Regional Research Laboratory. Cotton fiber is partially acetylated without destroying its fibrous character. Fibers thus treated have good resistance to rot and mildew, with the added advantage of enhanced heat resistance.

Applications of infrared rays to drying textile products have been extended. This radiant heat has a number of advantages over forms of drying which depend mainly on conduction and convection. High-frequency dielectric drying has been receiving much attention, with a few commercial applications and with increasing promise that systematic research may greatly broaden the range of successful applications.

RESEARCH OUTLOOK. For 1947, it seems certain that textile research will undergo substantial expansion, both in amount and in range of topics. Fundamental research on the mechanical side of the industry is newer than on the chemical side; so, if there is a spectacular textile development in 1947, it seems more likely that it will arise from chemical rather than from physical and mechanical research. Continued improvements are to be expected in textile machinery and in equipment for finishing and dyeing, but drastic departures from existing designs seem unlikely to appear this year.

On the fiber side, staple nylon is likely to widen its range of uses considerably beyond those of filament nylon; and rayon may be expected to make the most of its favorable price situation.

Many new blends may be expected, with glass fiber expanding its present share in the blending art.

Knitting and Finishing Lead

NEW MACHINE DEVELOPMENT

HIGHLIGHTS: *High-speed tricot machines introduced by three builders and rumors say more to come—New parallel-side spinning bobbins increase package size—Continuous-fulling mill looked upon as great advance step.*

By GORDON B. M. WALKER
Assistant Editor, TEXTILE WORLD

GREATER PRODUCTIVITY of knitting machinery highlighted new developments of textile equipment in 1946. In knitting, greater numbers of feeds on circular machines and increased speeds of tricot machines were the keynote. Finishing-machine builders appeared to accent continuous-process equipment and increasing utilization of stainless steel. New ideas from abroad and from sources outside the industry continued to stimulate industry thinking; a number of equipment builders heretofore strangers to the industry continued to develop new machines behind closed doors.

KNITTING MACHINERY. Further increases in already high speeds were features of new tricot machines. In addition, rumors of several other new high-speed machines were reaching the ears of the industry. The new Aveco machine, under development but previously unshown, operates at 509 courses per minute and is claimed to be the fastest 168-in. machine in the world. The new F.N.F. machine, built in England by a subsidiary of Courtalds, Ltd., and sponsored in this country by American Viscose Corp., is built in 84-in. width, operates at 1,000 courses per minute. It employs bolt-type needles said to permit a 28-gage machine to run 400-den. yarn.

A third high-speed tricot machine, developed by Robaczynski Machine Corp., is a two-bar machine made in 180-in. width and reported to operate at speeds in excess of 500 courses per minute.

A combination warp-knitting and weaving machine, called "Kayloom," reintroduced in improved form by Robert Reiner, Inc., employs warp and filling yarns as in weaving; but instead of interlacing the two systems of yarns, it works them together with a knitting

stitch. The fabric produced reputedly can be made to resemble either knitted or woven fabric in a very wide range of patterns.

The 64-feed circular machine announced by Supreme Knitting Machine Co., Inc., is equipped with a micromatic stitch adjuster on each feed; production of the machine is reported to be over 100 yd. per hr. New circular machines in sizes of 18, 20, and 24 in., with 64, 72, and 84 feeds respectively, introduced by Edmos Products Corp., are provided with such features as central oiling systems, cams and other parts made of cast steel, sealed-unit take-up, and adjustable yarn guides. The new Brinton plain-jersey machine, in sizes of 20, 24, and 26 in., utilizes from 24 to 64 feeds; production of one of these machines having 20 needles per inch and running medium-size yarns was reported to be 80 yd. per hr.

A new raschel machine said to operate at twice the speed of prewar German machines was produced by Kidde Mfg. Co. The unit is a two-bar, 36-gage machine in 96-in. width with speeds reported to be 220 courses per minute.

Other developments in knitting-mill equipment included a new 12-form, high-speed hosiery-boarding machine equipped with controls for steam pressure and heat; for the comfort of the operator, the unit is air cooled. A combined stop motion and latch opener for circular latch-needle machines was announced by J. A. Ruth, High Point, N. C., but is not known to be in commercial production.

YARN PRODUCTION EQUIPMENT. Increase in warp-spinning-package sizes of 30 to 35% are one of the features of new parallel-side paper-tube bobbins introduced by Sonoco Products Co. Aluminum adapters for converting conventional-style spindles to permit use of the paper tubes were developed at Joanna Textile Mills and put into production by Transportation Equipment Co. Tip drive for the paper bobbin, achieved by cushion grip at the top between adapter and tube and no grip for the remainder of the length, is reported to permit substantial increases in spindle speeds. Two other new spindle improvements by other builders are expected to go into production in 1947.

A new line of drawing frames announced by Medley Mfg. Co. for use in processing natural and synthetic fibers from $\frac{5}{8}$ to 6 in. in length are furnished with four or five lines of metallic rolls for cotton and four lines for wool and synthetics; extra-wide roll stands can be provided for feeding up to eight ends per delivery.

For processing synthetics, several developments which are well along and should be announced soon are a new tow-to-top process and two radical innovations in throwing machinery.

Pot-spinning equipment for woolen yarns, announced several years ago by John J. McCann, has now been adapted to worsted spinning. Production of 3-lb. packages, pot speed of 10,000 rpm., and drafts up to 25 are features of the machines, which are not yet in commercial production. Meanwhile, a new woolen card and a new worsted spinning frame, both as yet unannounced and both by builders new to the textile-machinery field, are exciting interest among those who have seen the machines.

A set of rolls for drafting sliver as it is delivered from the doffer of a cotton card, developed by P. M. Thomas and J. H. Barton, is said to decrease the number of ends down, to place more sliver in the can, and to make possible increased card production; drafts up to five are possible by using this device.

Not exactly a yarn-production machine but nevertheless of interest to those who produce yarn is the new 50-end fiber-bonding machine developed by Dan River Mills and manufactured by Walter Kidde & Co.

Designed to increase filling-winder production and to relieve operators of non-productive tasks, a new automatic bobbin-chalking device has been announced by Whitin Machine Works for application to the Whitin-Schweiter winder. The chalker will make bobbins with one or or two chalk marks, as desired.

FINISHING EQUIPMENT. Of great interest in the finishing of wool fabrics was the announcement of James Hunter's continuous-fulling mill. With reported advantages of more uniform fulling, greater productivity, fewer fulling wrinkles, and elimination of tangling, the new unit will run up to eight strings and is said to be practical in any mill producing 24 or more pieces per day which require the same fulling time. This successful application of continuous-process methods to fulling gives rise to the hope that successful continuous dyeing of wool fabrics will emerge in 1947.

Two new tenter-frame developments were announced in 1946. New overhead-drive machines introduced by H. W. Butterworth & Sons are designed to operate at speeds up to 100 yd. per min. in mercerizing and up to 250 yd. per min. in straight automatic models. An overfeed pin tenter especially applicable to the finishing of resin-treated fabrics, developed in Scotland by John Dalglish & Sons, is to be made in this country by Proctor & Schwartz, Inc. Amount of warp shrinkage is controllable by hand-wheel arrangement; hydraulic cloth guiders direct the fabric on to the pins; speed is reported to be 90 yd. per min.

WEAVING AIDS. Laminated-plastic picker sticks introduced by E. H. Jacobs Mfg. Corp. are reported to outwear several standard hickory sticks.

A new high-speed horizontal warper featuring light-metal construction, announced by Sipp-Eastwood Corp., is designed to operate at speeds up to 500 yd. per min. from an inside-sheet creel. The beaming mechanism will accommodate beams up to 28 in. in diameter and operates at 60 yd. per min. A honeycomb high-speed warper creel introduced by Danica Laboratories is made up in 150-end sections; round shields are designed to prevent excessive ballooning and to keep adjacent ends from hitting each other, thus permitting higher warping speeds.

Developments in wet-processing machinery ranged from individual units up to complete ranges for continuous processing. A small machine known as the "Williams Unit," introduced by Morrison Machine Co., is designed for short or long continuous operation in dyeing, washing, saturating, pre-heating, and after-treating cotton, rayon, and mixed-fiber fabrics. The machine holds about 60 gal. of water and circulates it at the rate of 180 g.p.m. For coating fabrics, a machine introduced by John Waldron Corp. is said to be the first completely coordinated piece of equipment to replace the groups of individual machines used heretofore. The machine unrolls, coats, dries, and rewinds the fabric. A vat-dyeing range employing a new steamer with provision for cloth entrance at either top or bottom was announced by H. W. Butterworth & Sons. The new range is said to produce fast shades at speeds up to 120 yd. per min. A continuous steam dye range produced by Cook Sales & Engineering Co. is composed of two padders, one a 2-roll and the other a 3-roll machine, and a stainless-steel steam ager. For conventional fulling mills, Riggs & Lombard, Inc. developed resin-treated lags which are reported to have better grip and longer life than untreated wood and to be impervious to alkali and tar removers.

For feeding hydrosulphite to continuous-process dyeing ranges, an automatic feeder introduced by Virginia Smelting Co., has a feeding capacity up to 200 lb. per hr. and is said to enable dyers to maintain uniform strength of reducing baths.

A new development designed to eliminate back grays in printing, developed by Dewey & Almy Chemical Co., utilizes a special embossed printing blanket carrying a film of powder. The powder is reported to catch the excess color coming through the printed fabric and to facilitate the cleaning of the blanket in the blanket washer. Another innovation in printing is the development in Switzerland of a new process of printing fabrics, utilizing an adaptation of the "off-set" process long used in paper printing.

The application of supersonics, very high-frequency sound waves, to dispersion and bath-exhaustion problems in dyeing is now in the experimental stage.

A new one-pass singeing machine, manufactured by Carbomatic Corp., singes both sides of fabrics simultaneously. It is equipped with controls for processing any of a range of several widths of cloth, and is provided with variable-speed drive for adjustment for light and heavy fabrics.

CONTROL AND TESTING. Dumont's polar-coordinate cathode-ray oscillograph for use in studying the operation of machinery has been finding increasing textile uses.

Two new developments of interest to finishers are: an electrometric, dead-stop titrator introduced by Wilkens-Anderson Co. for moisture-content determinations; and a set of short-range test papers, developed by R. P. Cargille, which are designed to indicate

pH within 0.25 over a pH of 1 to 14.

The air permeability of fabrics up to ⅞ in. thick can be measured with the Permeometer, introduced by W. & L. E. Gurley. A tensometer for measuring tension in single strands of yarn, announced by Walter Kidde & Co., Inc., has a range up to 100 lb.

BETTER FINISHES at Less Cost Is Goal of Industry

HIGHLIGHTS: *Cotton finishing efficiency is rising with growth of continuous processing—New fiber blends give finishing opportunities—Wool field is successful in use of synthetic detergents—Olive oil substitutes are improvements on original.*

By C. NORRIS RABOLD and N. D. MARIUS

IN THE FIELD of cotton finishing, the outstanding developments over the last year have been more mechanical than chemical. Emphasis has been on streamlining of processes and reduction of time in such operations as boiling-off, bleaching, and dyeing.

RANGE OPERATION. Finishers generally have accepted continuous steaming or bleaching ranges. A number of these units have been installed in various plants, with other contemplated for 1947. Probably no two installations have been exactly the same; they vary according to a particular plant's needs. Data obtained from operation of previous set-ups affect the design and operation of newer units. Installations vary from complete open-width ranges where the various operations of caustic impregnation, steaming, washing, peroxide impregnation, steaming, and washing are carried out entirely in the open-width to other types in which the impregnation is done in open-width but the washing and steaming is in rope form. With still others, all operations are carried on in rope form throughout. The speeds of these units may vary from about 75 yd. per min. to over 200 yd. depending upon the type of equipment. Time to process cloth is from as low as 50 min. to over 2 hr.

In dyeing, the industry has also accepted two new continuous developments: the DuPont pad steam system, and the Williams unit. Both systems were devised for the dyeing of fast colors in minimum length of time with minimum amount of auxiliary chemicals.

With both the continuous bleaching and the dyeing ranges, it is important that the removal of impurities and chemicals should take place in a short period of time. The Williams unit has proved itself not only useful as a piece of dyeing equipment but also as a washer, and it may be the forerunner of washers of drastically different design from those now in use.

FINISHING NEWER BLENDS. Experimentation with various fiber mixtures in spun blends, plied yarns, or mixed yarns will increase during the coming year and the resulting fabrics (containing two, three, or even more different fibers) will be a great improvement over those now available as to shrinkage stability, appearance, and wearing qualities. Multi-fiber fabrics of this sort present new problems in preparation, dyeing, and finishing since emphasis is on the dyeing of such mixtures in fast colors. The problem of shrinkage control and dimensional stability is also most important. To aid the finisher in this phase of processing, there are better and more diversified types of urea-formaldehyde and melamine resins, plus two comparatively new chemical treatments. The first of these latter methods consists of treating mixed-fiber fabrics with a high concentration of caustic soda under controlled conditions; while the second is a treatment, also under carefully controlled conditions, with glyoxal. Both of these treatments are promising, as they can be used for stabilizing shrinkage without materially affecting hand or body of the fabric.

NEW WOOL DETERGENTS. Synthetic detergents are now in a favorable position to prove their value as alternatives for soaps. Before World War II had started in Europe, the most economical synthetic for wool figured about twice the cost of soap on a pound basis. Now, the picture is exactly reversed. Wool scouring can be carried out with no soap at all if a proper synthetic is used. In selecting such a synthetic, consideration should be given to its stability to lime. The new materials are much better in resisting precipitation of lime or calcium compounds than the conventional fatty-acid soaps, but a few excel remarkably in this respect. As a result, these selected detergents will give a much cleaner scoured product where limed or pulled wools are either scoured alone or in blends. It appears that the soap shortage will last well into 1947. The wool scourer should be able to produce as economical a product as ever by intelligent use of a good synthetic.

Synthetic detergents can now be used to great advantage in wet finishing of cloth. Probably a mixture of soap and synthetic may be chosen by many finishers, but better dyeing results are sometimes obtained by use of the synthetic alone.

SELF-SCOURING OILS. The soap shortage will give impetus to more extended use of the recently developed self-emulsifying oils for fiber lubrication both in woolen and worsted manufacture. Due to the shortage of edible fats throughout the world, it appears that olive oil will not be available for worsted yarns for a long time. It is, however, a question whether worsted spinners will ever go back to olive oil. From a technical standpoint, there should not be any necessity to do so due to the advances made in supplying olive-oil alternatives. The early problem of removing some of the mineral-oil mixtures has been overcome with the newer self-scouring types of lubricants. The tackiness or drag which the spinner always liked with olive oil can now be supplied in any lubricant with the use of a colloidal silica.

WASHABLE WOOLS. The consumer should be offered a greater supply of

washable wool garments this year. The Lanaset and Resloom processes using melamine resin for woven fabrics have made progress during the last few months, and much washable material has been advertised and styled by dress manufacturers. Much development work for washable hosiery, underwear, and other wool articles is in progress with chlorination, Durlana, and Koloc processes.

Continuous processes in wool-goods finishing are under development and hold promise for coming years. Problems in continuous wool dyeing are likely to be overcome before long, and already a continuous fulling machine is available.

ONE-STORY MILLS *Favored* By Modern Engineering

HIGHLIGHTS: *Developments for 1946 are found mostly in additions rather than new unit plants—Cotton mills have bought much machinery chiefly for replacement—Considerable new construction in rayon-weaving and hosiery fields—Materials-handling projects are important—High cost and shortages delay some projects.*

ENGINEERING DEVELOPMENTS in the textile industry during 1946 have involved plans for improvements and additions to existing mills on a more important scale than erection of independent new manufacturing plants.

INDUSTRY BRANCHES. The rayon yarn branch makes the most impressive showing, so far as new plants are concerned, with several large new units already announced and others said to be under consideration. Rayon-weaving plants and hosiery mills are smaller as units and more widely distributed than the yarn plants, but the aggregate amount of improvements and new construction in these subdivisions of the rayon branch of the industry is considerable. The woolen and worsted branch has also been busy with modernization and plant additions.

Cotton mills have placed huge orders for machinery. The second-hand machinery market also is active, with many foreign as well as domestic buyers. Old cotton-mill equipment can generally be exported as soon as it is made available by replacement with new equipment. The present total productive capacity of the cotton branch appears to be accepted as sufficient to supply long-range demand for yarn and cloth, since no large new cotton mills are reported to be actually under construction.

Improvements and additions to finishing plants for both cotton and rayon represents a large volume of work, both completed and projected. Finishing is the connecting link between gray goods mills and the consuming market, and the strategic location of finishing plants to facilitate economical assembly of gray goods and distribution of finished goods has made it desirable to build new plants in some particular localities.

ONE-STORY PREFERRED. One-story construction is preferred for spinning, weaving, and knitting mills. This preference is based on several considerations among which are better departmental layout, better provision for future expansion, and better facilities for materials handling. The one-story design is well adapted to windowless buildings, which have certain advantages in special cases. The windowless feature simplifies control of air conditioning, permits constant and uniform lighting, and works out particularly well for a business which plans three-shift operations. The one-story building with wide column spacing, and air ducts, wiring, and piping concealed by acoustically-treated, suspended ceilings is now the standard basic mill design.

Little change has occurred in flooring. In general hard maple is the most popular type. Cement and asphalt floors both find acceptance for certain areas. In offices, rest rooms, toilets, etc., it is usual practice to install asphalt tile and/or ceramic tile.

EMPLOYEE COMFORT. An item which is receiving greater consideration than in the past is the layout of rest rooms, wash rooms, locker rooms, toilets, smoking rooms, with more attention being paid to the comfort and safety of employees. Wall-hung fixtures in toilets, and tile floors with adequate drainage, partitions hung from the ceilings, all help to make conditions better.

A novel idea in a smoking room is an arrangement providing a lounge with comfortable chairs, tables, settees, having the entire side adjoining the spinning room or other working area of plate glass. This gives an unobstructed view of the entire room at all times which discourages loafing but gives employees an opportunity to enjoy a quick smoke in a restricted area.

The employee is being considered also in the installation of "Music While You Work" systems. These are connected with a paging system and public address system so that important announcements can be made at any time.

Radiant heating has been used for special processes. Now comes the proposal to apply radiant heating to the entire working area replacing the old heating coils and the more modern unit heaters. This is still in the experimental stage but is worth watching. Another system of process heating, newly developed and used experimentally in other industries is pulsating heat. This may find a place in textiles.

Air conditioning adaptable to the various requirements of different departments is a requisite for efficient textile manufacturing. This is different from the older and simpler humidifying system. Effective air conditioning involves refrigerating equipment and automatic controls; also thorough insulation of walls and roofs which thereby becomes a requisite feature of the modern mill.

Mill improvements include a better finish on walls and ceilings and the use of color to promote efficiency in manufacturing operations. Some of this is accomplished by painting and some by tile surfaces on interior walls.

MATERIALS HANDLING. Materials-handling equipment is effective, not only in labor saving but also in reducing

the time spent by material in process. One-story plants are served by comparatively simple equipment consisting of elevator trucks, tiering machines, storage-battery trucks and tractors, belt and apron conveyors, and driven and gravity roller conveyors.

Older multi-story mills, in the effort to compete with modern one-story mills, find it necessary to install such devices as automatic elevators, dispatching systems, and other specialized materials-handling equipment. Pneumatic conveyor systems for raw cotton and wool have long been standard equipment and are still well regarded for that purpose.

Monorail conveyors can be used for a variety of purposes throughout the plant to save labor as well as floor space. Applications extend all the way from unloading materials to storing and shipping finished products.

COST INDUCES SIMPLIFICATION. Purchased power eliminates the cost of power-generating equipment for most textile mills in areas of economical power transmission from central stations. Heat for buildings and processes has to be provided by steam plants. Some power may be generated as a by-product of process steam. The cost of equipment now compels the utmost simplification which is consistent with efficiency, in power and heating plants. The increased cost of fuel justifies power and heating plant improvements in many cases.

The effect of high cost and shortages, which have delayed or stopped a number of projects, may be to reduce the current demand for materials and labor. This reduction of demand may serve as a curb on prices, and the advent of lower costs might easily revive old projects and stimulate new ones.

PERSONNEL RELATIONS

Reach Firmer Ground

HIGHLIGHTS: *Textile industrial relations less explosive during 1946 than those of most other industries—Steady progress over difficult road is forecast for 1947—Incentives, profit-sharing, employee testing, health programs, in-plant feeding are greatly expanded.*

By C. MALLARD BOWDEN
Southern Editor, TEXTILE WORLD

WHEN COMPARED with labor-management relations in the motor-car and electrical industries, textile industrial relations during 1946 appeared to be generally superior and more successful. Such problems as existed, and there were many of them, reached settlement by normal means; and, although strikes occurred, the behavior of textile labor generally was more reasonable and less influenced by the high-pressure, nation-wide strike psychology.

That such restraint in a generally unrestrained year should be found in one of the nation's oldest industries is a tribute to both management and labor; and that this restraint occurred in a year characterized by intensive union action, notably the belligerently termed "Operation Dixie," may provide a key to the course of textile industrial relations in the years to come.

The men behind Operation Dixie, which began with trumpet-blowing streamers in all the big newspapers, discovered that the course of industrial relations in the South (as well as in most other parts of the textile industry) is slow, steady, and more determinable by the little things that occur or do not occur on the mill spare-floor than by those big decisions, sensationally reported under a Washington dateline.

TRENDS. The trend in labor relations and the prospects for more competitive prices and markets indicate that employee incentives will receive stronger support in the textile industry than heretofore. It is likely that more mills will apply general wage-incentive systems, so that employee performance, including supervisory performance, may be measured and paid for in proportion to the results accomplished.

Knitting mills, more generally than cotton or wool mills, are giving attention to the phase of pre-employment testing that measures the aptitude and potential ability of employees. The use of the Orthorater at Magnet Mills, Clinton, Tenn., was one example. However, an outstanding system of correlated testing, training, and education, has been offered to employees by Dan River Mills, Inc., Danville, Va. Training methods which are directly applicable to the textile operator's daily tasks are exemplified in the mock-up spinning assembly used to train spinners. [T. W., Sept., 1946.]

There are indications that the industry is preparing for more specific methods of pre-employment testing. Parker High School, noted for textile training in the Greenville, S. C., area, has long been interested in the preparation of such testing devices; and personnel directors of cotton mills recognize the need. While the full development of pre-employment testing may be a matter of years, some improvements should be noted during 1947.

PERSONNEL PROGRAMS. Personnel programs were greatly expanded during 1946. Mills which had serious union negotiations employed special industrial-relations counsel, although most mills continued to operate all phases of personnel relations through the personnel department proper. Associations are appointing industrial-relations experts to advise their membership.

Provisions for veteran training at Cannon Mills, Kannapolis, N. C., were set up last year as a special department and function. Veteran training, however, in most mills, is done by the personnel department, which gives another example of the considerably enlarged personnel activity.

Personnel programs are not confined to simple record-keeping, but are vitally concerned with all phases of plant direction and management. To the personnel director, the following fairly new ideas or programs mean more work to his department, but more respect for the efficiency of personnel management generally: movies, special courses, and classes for employee training; pre-employment testing; health-checkup trends and changes; increased use of recreation programs; more cafeterias and a continued upsurge in in-plant feeding of various types; more plant newspapers.

Better HANDLING METHODS Offer Large Savings

HIGHLIGHTS: *Materials handling is more than just transportation—Average cotton mill has to handle a great variety of packages—Labor costs of bale handling reduced 72% by mechanized system—Overhead picker-lap system pays for itself in 2½ yr. and reduces damage to laps—Large savings and freedom from dirt and damage realized with system for beams.*

By W. B. McGUIRE
Werner Textile Consultants, Inc.

THE OPPORTUNITIES for improved materials handling in the textile industry are enormous. According to cost analyses made recently in several mills, handling of materials accounts for up to 43% of textile-plant payroll, as compared with a general nation-wide average of 22%. The basic design and function of the various processing machines used in spinning and weaving were established long ago, when only the crudest type of materials-handling equipment was available. But some of these archaic handling methods have persisted to the present day.

Few industries have to handle a greater variety of packages than a cotton mill, and each item requires separate study and treatment. At times, the proper solution to any given problem can be found only after a careful analysis has been made of conditions existing in a mill.

New methods of handling have been developed for the whole range textile items, with degrees of success ranging all the way from moderate to sensational.

Following is an actual case history of how bales of cotton can be handled.

Abstract of address presented January 14, 1947, at Conference on Materials Handling, held concurrently with Materials Handling Exposition, Cleveland, Ohio.

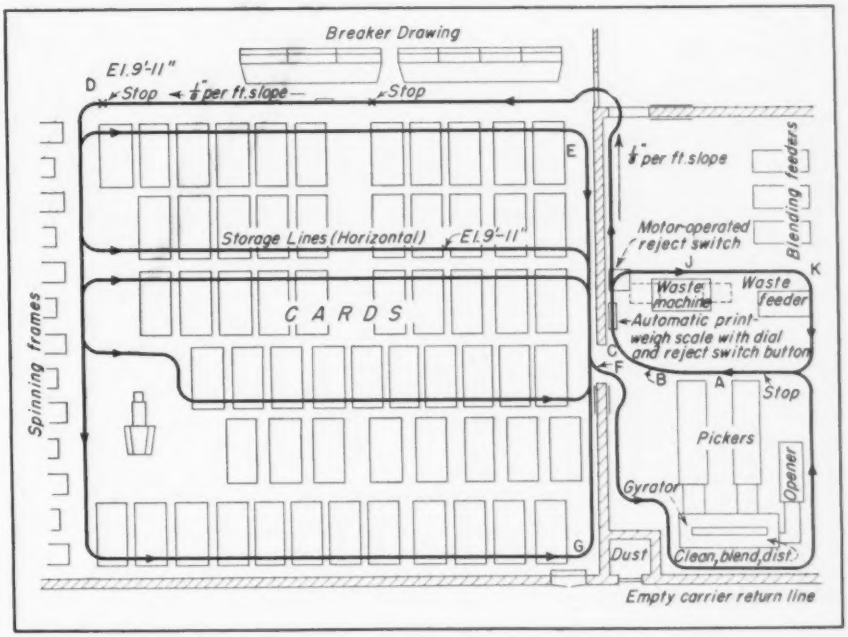


Fig. 1. Overhead picker-lap-handling system automatically rejects off-weight laps, delivers laps to cards without damage, and saves storage space on picker-room floor.

HANDLING BALES. The platform of a particular cotton-waste plant receives approximately 30,000 bales per year, and ships out almost as many. The following operations are involved in every shipment received: (a) unloading of box cars; (b) transportation of bales to scale for weighing and checking; (c) transportation of bales to specified warehouse, according to kind of waste; (d) stacking of bales.

In addition to the supervisor and checkers, 22 laborers were required to do this work. With the exception of a couple of machines for stacking, all

(Continued on page 210)

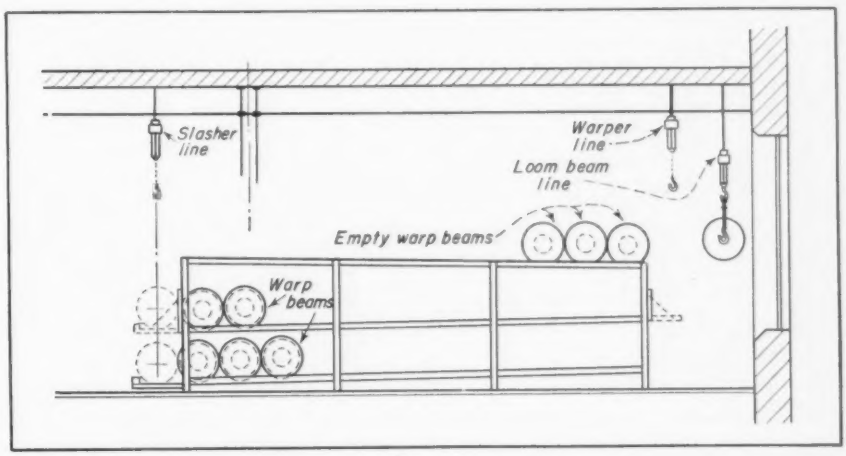


Fig. 2. Storage rack for warp section beams is designed for use with complete overhead handling of beams, beginning at warpers.

Wider Use Seen for INTERLOCK KNITTING

INTEREST has been stimulated in interlock knitting by reports of textile technicians who visited Europe following the cessation of hostilities. These technicians found a greater proportion of interlock knitting in Germany, for example, than in the United States. [T. W., May, 1946, p. 113]. Following is a description of interlock stitch formation and machine operation.

An interlock fabric has the same stitch appearance on both sides; it is smooth and even in texture, possesses considerable elasticity and is suitable for most underwear and sleeping garments. It has more run resistance than plain or rib fabrics. Unlike the plain knitted structure, it has equal tension on both surfaces and, when cut, will not curl very badly at the edges.

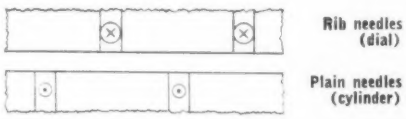
An interlock fabric can easily be mistaken for a fine 1x1 rib knit, but a 1x1 rib knit possesses greater lateral elasticity owing to the relaxed position of the rib wales.

Briefly described, the interlock is a compound fabric composed of two separate 1x1 rib fabrics interknitted with each other to form one.

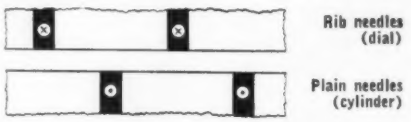
Figs. 1, 2, and 3 show the loop structure of plain interlock fabric. Figs. 1 and 2 show two separate and open drawings of 1x1 rib knitting, and at the foot of each sketch the plain view of the fabric is shown.

It will be noted that alternate wales (rows of loops downward) lie in different places owing to the structure or pattern. Alternate wales are knocked over in opposite directions and are produced on two beds of needles (cylinder and dial). The needles in one bed are at right angles to and centrally disposed between the needles in the opposite bed. This produces the simple 1x1 rib structure as shown in Figs. 1 and 2.

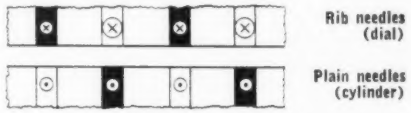
If these sketches are studied closely, it will be seen that the rib loops c and the plain loops *d* are in different positions in each sketch. Where c is in Fig. 1, *d* is in Fig. 2 and vice versa, thus the needle lay-out for Fig. 1 would be as follows:



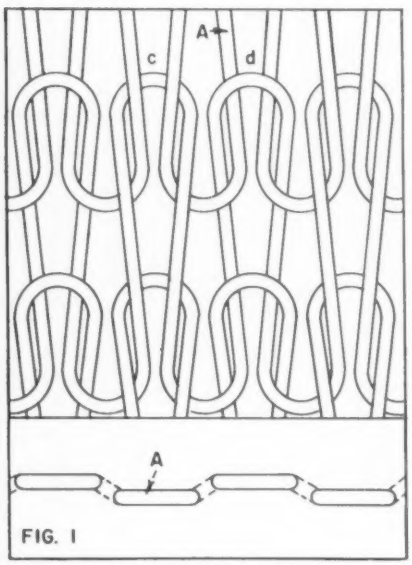
The needle lay-out for Fig. 2 would be the reverse, as follows:

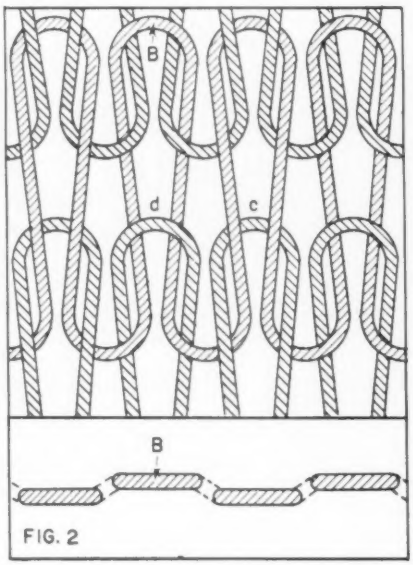


To produce interlock fabric, these lay-outs are combined as shown below:



The shaded needles will produce fabric shown in Fig. 2 and the plain needles will produce the fabric shown in Fig. 1. The combination of these two fabrics is shown in Fig. 3, where courses are knitted first on plain needles and then on shaded needles round the cylinder alternately. Fig. 3 presents the appearance of interlock under a powerful glass, assuming that the threads could be sufficiently clearly segregated.





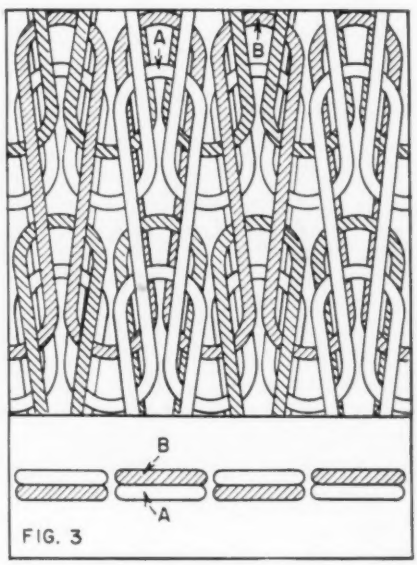


Fig. 1 shows loop formation on one side of fabric, Fig. 2, on the other, and Fig. 3, both combined in knitting of plain interlock fabric.

HIGHLIGHTS: *Circular-knit fabric is run resistant and has similar stitch appearance front and back — Can be mistaken for 1x1 rib — Machine has advantages of coarse gage yet produces fine fabric.*

By H. WIGNALL, *Leicester, England*

INTERLOCK MACHINE. The interlock knitting machine is of circular construction and has a cylinder and dial similar to a rib-knitting machine. It is modern practice to have a revolving cylinder and stationary cams, although some firms produce either as required by the customer. The revolving-cylinder type is perhaps the most efficient, because the operator can have a clear view of the fabric without walking round the machine, although there is a great deal to be said for both types. The machine shown in the photograph has a stationary cam race and is fitted with many new features. It is dogless, and the dial is gear driven. The drive is obtained by means of a spur gear wheel equal in size to the periphery of the dial and splined to the dial shaft. The gear is interconnected through a side shaft with a gear under the cylinder. Either in-built-motor or belt drive is furnished; a centrifugal clutch permits smooth, even starting. Provision is made to eliminate wear and to centralize the dial and cylinder needles.

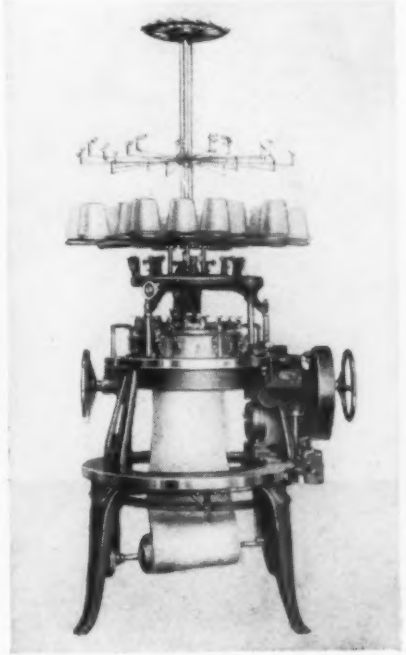


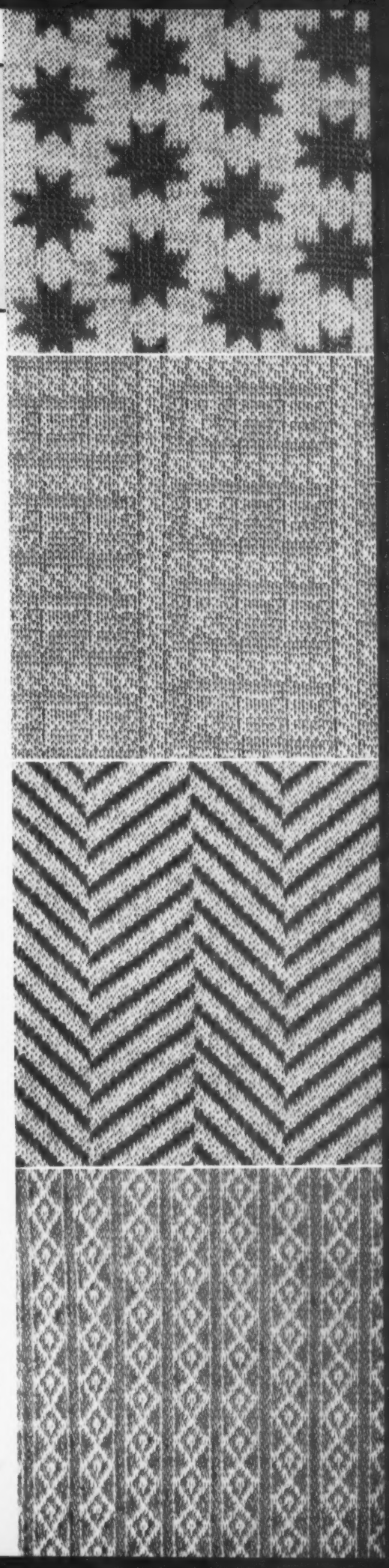
Fig. 5. Interlock machine has multiple feeds and "electronic" stop motion. Courtesy Mellor Bromley & Co., Ltd., Leicester, England.

An "electronic" stop motion has advanced the use of interlock machines (in England, at least). The action of the stop motion is definite, instantaneous, infallable, supersensitive, and yet is unaffected by the whip of the yarn as it leaves the machine. The equipment is simple and easily maintained. The writer spent a considerable time trying to make the fabric press off by snipping the yarn with scissors, etc., but the machine stopped instantaneously every time. In a small plant, machines were being run without operators for considerable periods. Thanks to the stop motion, machines were started and left running with full confidence that in the event of yarn breakage the machines would stop.

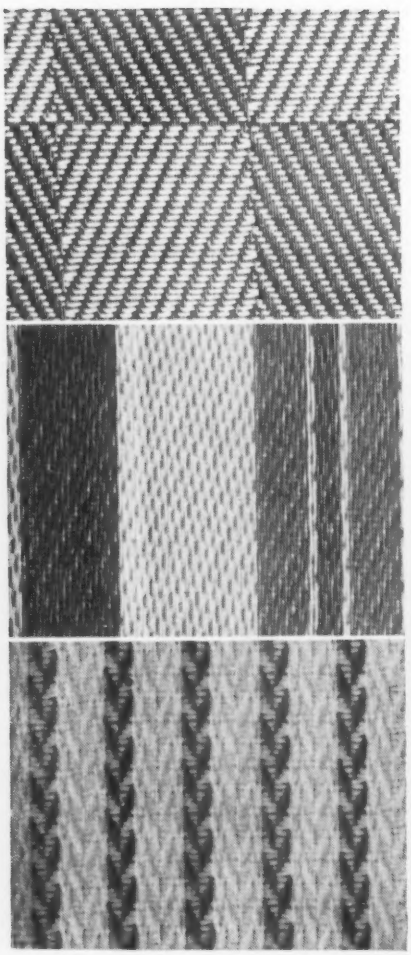
MAIN PRINCIPLE. The main principle in interlock knitting is that alternate needles knit at alternate feeds. The division of needles can be obtained in many ways, but the most popular method is to have alternate long and short needles whose butts operate in different cam systems. The butts of the long needles ride in the inside cam race and the butts of the short needles ride in the outside cam race. The needles knit alternately on different feeds.

The efficiency of the interlock machine and its comparative freedom from mechanical faults is due to the fact that a "coarse-gage" machine is producing a fine fabric. Since alternate needles only knit at each feed, the actual knitting gage is twice as coarse as the actual needle gage. The present world-wide demand for interlock machinery and the extreme durability of the machine point to an increased production rate.

Fig. 4. Samples show designs knitted on interlock machine. ➡



MODERN MILL BUILDING
Features Control of Air

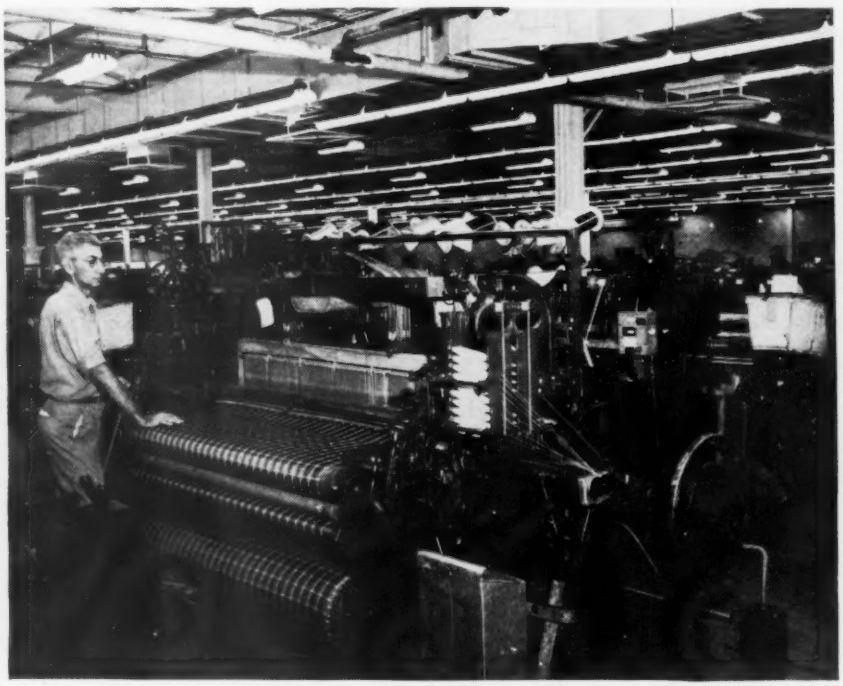


These three fabrics, woven at Chicopee's new Lumite plant, indicate the wide range of patterns possible with the vinylidene chloride yarn. The yarn is available in several diameters and 42 standard colors.

HIGHLIGHTS: *Air changed 14 times per hr. in Chicopee Mfg. Corp.'s new plant at Cornelia, Ga. —Sealed windows do not permit interference—Tile used extensively in new construction.*

MODERN DESIGN, double-glazed window sash with vacuum insulation, and central-station air conditioning are among the advanced mill-engineering details incorporated in the new building of Chicopee Mfg. Corp. at Cornelia, Ga.

Containing approximately 55,000 sq.



On this Crompton & Knowles loom, weaving Lumite fabric, note the spools on a creel above the superstructure of the loom. These spools of yarn are used for extra warp ends and color effects. Note also the arrangement of continuous-line and broken-line fluorescent lights. An intensity of 35 foot-candles is maintained at the critical points of the work.

The new mill built by Chicopee Mfg. Corp. at Cornelia, Ga., has approximately 55,000 sq. ft. of floor space. When installation of machinery is completed, the mill will have about 200 looms and will employ approximately 300 workers.

ft. of floor space, the mill was built and equipped to process Lumite (vinylidene chloride) products. Current production includes a wide range of constructions. Working with a raw product that is available in several diameters and 42 standard colors, the Lumite Div. of Chicopee looks forward to a wide range of fabrics and designs.

The mill, engineered by Robert & Co., is a single-story, steel-frame building erected on a concrete foundation. The outside walls are built of 8-in. buff tile and are trimmed with terra cotta. A continuous band of windows runs the length of three sides of the building. The window sash are glazed with two panes of glass, with a vacuum between panes. No provision is made for using the windows for ventilation.

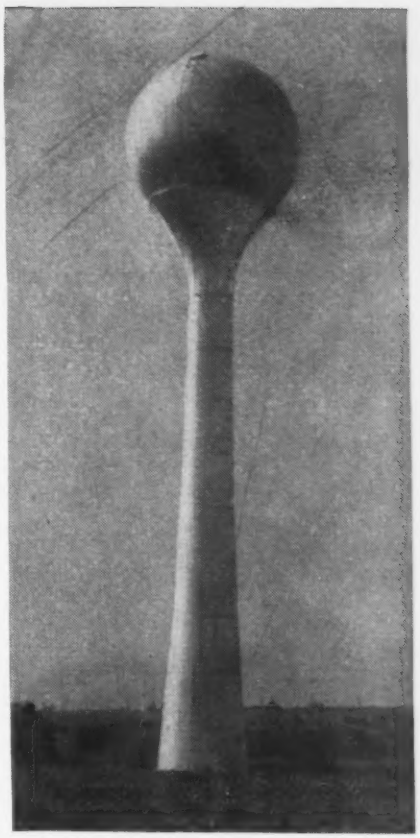
The mill floor consists of three divisions of 37½ ft. each. The 415-ft. length is divided into 30-ft. bays. Approximately half the floor area is finished in concrete, while the other half consists of maple flooring laid on a sub-floor embedded in tar concrete to prevent exposure to dampness.

Floors in the office areas are finished with asphalt tile, and ceilings in these areas are covered with acoustical tile. In the toilets and locker rooms, tile is used for flooring and wainscoting.

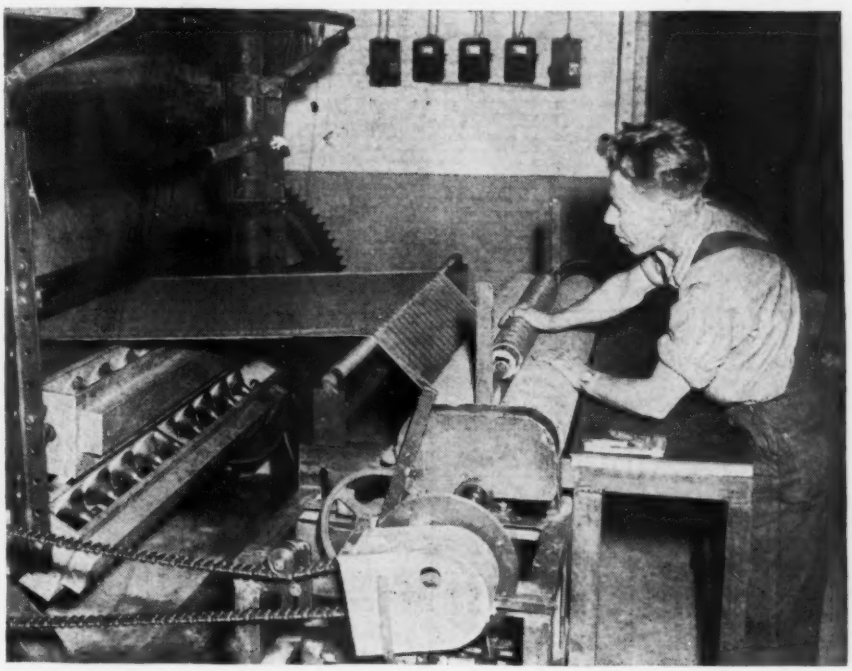
Operation of the evaporative-cooling and ventilating system is entirely automatic, and recording charts are kept at all times. The central-station system is equipped with two fan units, and with humidifying equipment installed on the roof. A complete change of air is made 14 times per hr. Since the processing of Lumite is not affected by humidity, this system was installed entirely for the comfort of the workers. A relative humidity of 55 to 60% is maintained at a temperature during winter of about 75° F., while during summer the temperature ranges about 15° F. lower than the outside temperature.

Power to operate the plant comes to the transformer station at 38,000 v. It is stepped down to 550 v. and delivered to inside dry-type transformers at points near the load centers. Here it is stepped down to 115 or 230 v. By the use of capacitators, a load factor of 92% has been reached and maintained.

The boiler room, 35x35 ft., is at present equipped with a 150-hp. HRT Brownell boiler, two boiler-feed pumps, and a feed-water heater. A service tunnel connects the boiler room with the main plant, and all steam and condensate-return piping is placed underground in this tunnel.



The mill's sprinkler system is supplied from this 50,000-gal. spherical tank erected by R. D. Cole Mfg. Co. If an additional supply of water should be needed, connections to the city mains make a 115-lb. pressure water supply available.



Lumite fabrics are calendered on this three-roll machine to remove any wiriness that may be present in the cloth and to control, by pressure and tension, the thickness and width of the fabric. Heat is applied only to the bottom roll. Three banks of infrared lamps, one at the entrance side and two shown here at the exit side, raise the temperature of the calender roll to 170° F.

Partitions in the toilets are suspended from the ceiling. In addition to the Bradley wash fountains shown here, shower baths with hot and cold water are provided.

PERMANENT SIZES Approved By Test in QM Project at ITT

HIGHLIGHTS: *Four of 43 materials tested at Institute of Textile Technology recommended for mill trials—Quartermaster project begun because of wartime need—Mildew resistance one of factors evaluated.*

PERMANENT WARP-SIZING MATERIALS to replace starch have been found and evaluated by the Institute of Textile Technology in working out a project assigned to it by the Office of the Quartermaster General. Dr. Joseph H. Brant directed the project at the institute.

Of 43 materials and combinations of various materials tested, four were found to have satisfactory mildew resistance and qualities which might make them acceptable as warp sizes. The recommended sizes are Dow's Carboxymethocel A (CMC-A), Monsanto's Stymer, Rohm & Haas' RHoplex MR, and American Cyanamid's Aerotex 625.

The report recommends that extensive mill trials be conducted with these four successful materials starting with operating conditions stated in the following. These recommended conditions, as directly quoted from the original report, are based on a slasher speed of 25 yd. per min.

From Textile Series, Report No. 41, (released by the Office of Technical Services, U.S. Dept. of Commerce) based on research at the Institute of Textile Technology, Charlottesville, Va., under contract from the Office of the Quartermaster General through the National Research Council.

"*CMC-A*": Dissolve a low viscosity grade of CMC-A in 0.35 lb. of 28% NH_3 solution per pound of CMC-A. A concentration of 5% CMC-A will probably be found the maximum that can be used, because of the viscosity. An alkali-stable wetting agent should be used in the bath. Box temperature can be room temperature, or slightly higher. Elevated temperature will drive off ammonia. Size pickup should be about 5% of the weight of the dried yarn. Weaving should be at not over 65% relative humidity. Above this, the size may absorb water and become soft and swollen.

"*Stymer*: Dissolve in about 1 lb. of 28% NH_3 solution per pound of Stymer. Instructions from the manufacturer called for 5% ammonia solution. However, runs have been made with as low as 0.65 lb. of 28% solution per pound of Stymer. A concentration of 5% Stymer will probably be found the maximum that can be used, because of the viscosity. Stymer V-30 was used on this project. The box temperature may be up to about 50° C. Size pickup should be about 5% of the weight of the dried yarn.

"*RHoplex MR*: Dilute the 50% emulsion to 10%, with water, while agitating. Box temperature can be from room temperature to about 50 C.

"*Aerotex 625*: Dilute to 10%, with water, while agitating. It is believed desirable to raise the pH from its original value of 4 to 6 or 7. This can be done by careful addition of ammonia solution, with agitation, just before using."

According to the report, "CMC-A and Stymer can be extracted from the yarn by heating about 30 min. in 5% ammonia solution, at 80° to 90° C., and then rinsing in hot running water. After determining the original moisture in the sample, by conventional methods, the size is determined by difference. Because ammonia will extract matter from unsized yarn, blanks should be run and corrections made on the dry basis."

RHoplex MR and Aerotex 625 are applied from emulsions. Permanency is obtained by evaporation of the dispersing medium.

MILDEW TESTS. The first phase of the project fas the mildew testing of the materials submitted. Fabric samples were prepared by the ITT laboratory and tested at the Quartermaster Depot at Jeffersonville, Ind.

The second phase of the project was the preparation of yarns, sized with materials approved for mildew resistance, for single-end testing. There are no specific tests for warp sizings that can foretell their performance on the loom, the report states; however, certain general qualities are desirable in a sized yarn. These are increased abrasion resistance, increased tensile strength, maximum retention of elasticity, increased stiffness, and good fiber lay. There were also indications that stiffness, abrasion resistance, and tensile strength should be increased only within limits. In addition to this, the sizing material itself must not dust off too badly, nor must it be scraped off in any form that would adhere to the heddles, etc., during weaving.

As there were no tests judged to be truly indicative of "weavability" potential, sizing materials were to be approved if they improved these yarn qualities as much as starch did.

SLASHER USED. The yarns were sized on a modification of the slasher

TEST RESULTS

Size	Breaking Strength (grams)			Elongation at Break (%)		
	Max.	Min.	Aver.	Max.	Min.	Aver.
Unsized	580	315	445	8.2	3.0	5.8
Starch #1	700	385	535	8.0	5.0	6.3
Starch #2	670	365	529	7.0	4.0	5.7
Stymer 6%	640	420	473	7.0	4.0	5.8
Stymer 3%	540	335	463	8.5	5.5	6.6
CMC-A 5%	600	470	529	7.5	5.0	6.2
CMC-A 2%	530	330	456	6.5	3.0	5.2
RHoplex MR	535	385	458	6.6	4.5	5.7
Aerotex 625	730	422	530	7.5	5.0	6.2

The above elongation figures are influenced somewhat by lack of stretch during slashing.

Abstract from the foreword in the report on the permanent sizing project:

"With the large requirement for cotton duck that confronted the Quartermaster Corps during the war . . . it appeared desirable . . . to find a warp-sizing material which would not support the growth of microorganisms and which could accordingly be left in the fabric . . .

"At the end of the war . . . it did not appear desirable to carry the work . . . beyond the preliminary findings . . .

"In releasing this report to the public it was recognized that to make it of general value it would be desirable to identify the products tested. The industrial concerns which supplied them have accordingly been contacted, and the listings by product name which are made herein are with the concurrence of the producers whose products are so identified.

"Further research should be productive of results having military as well as civilian applications."

S. J. Kennedy, Assistant Director for Textiles, Clothing and Footwear.

designed by the Clemson laboratory of the U. S. Dept. of Agriculture, and built by the Pacific Mills' laboratory in Newark, N. J. The slasher was modified by the ITT laboratory to provide extra driven rolls and a constant yarn speed through the machine.

Everything possible was done to prevent stretching. The rewind was a reel with two collapsible spokes, driven by a cord belt with as little power as possible. This low power prevented stretching of the yarn at this point. The slasher was run at 4 to 6 yd. per min.; the bath temperature was 90 to 92° C. for starch, and 50° C. for all other materials. The dryer temperature varied from 65 to 95° C., depending on the specific material being used. The design of the experimental slasher limited its use to starch, cellulosic, and similar materials.

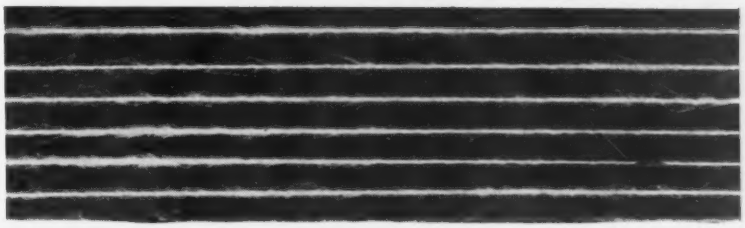
Abrasion testing of the sized yarns was attempted on a modified operation of the Walker abrader; but preliminary work showed little, if any, correlation with "weavability"; and the test was abandoned.

Tests for stiffness of the sized yarn indicated that all four materials are of the same degree of stiffness as starch.

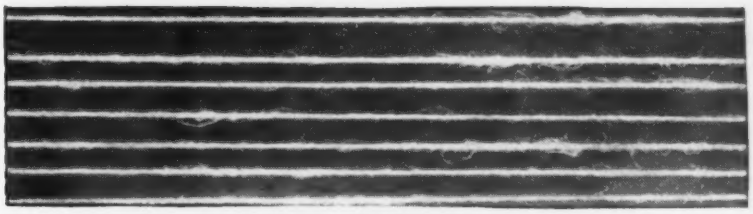
Tensile strengths and elongations at break of these materials as compared with starch are shown in the accompanying table. As can be seen, they are all within approximately the same range.

Visual tests of stiffness during slashing, and of hand-loop and hand-break behavior were also made. These all indicated that the four best materials were as good as or better than starch.

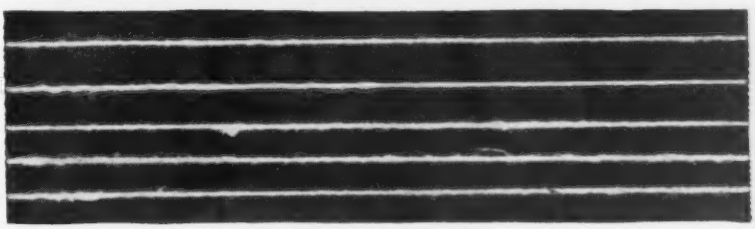
Test Results



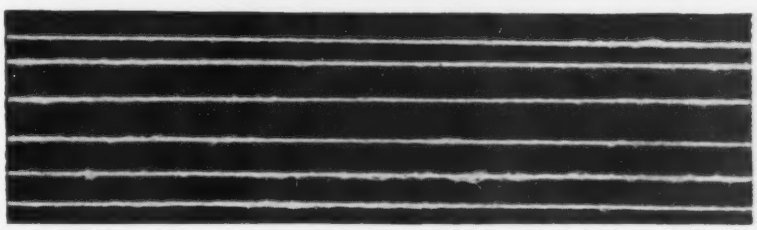
Unsized yarn



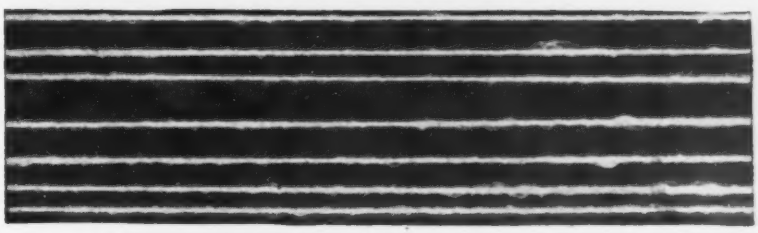
Starch sized, 8% size



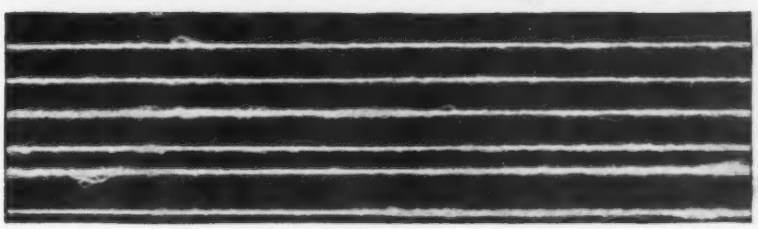
CMC-A sized, 5% size



Stymer sized, 6% size



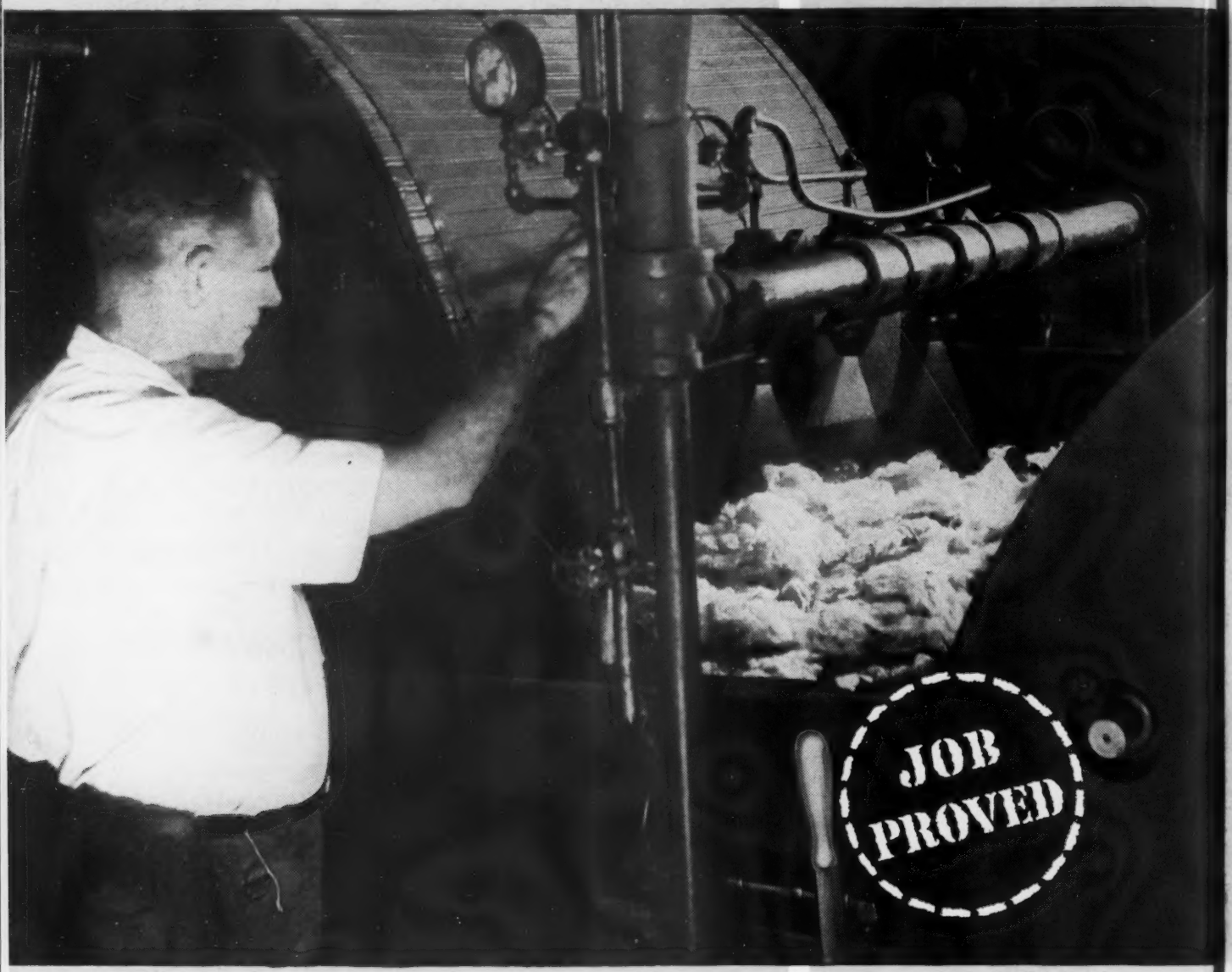
RHoplex MR sized, 5 to 10% size



Aerotex 625 sized, 5 to 10% size

Yarn-appearance photographs show how sizing materials tested lay the cotton fibers

3 Pounds More Wool per 100



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Shape of BOX BINDERS Can Cause Much Loom Trouble

HIGHLIGHTS: *Filling breaks can frequently be traced to faulty shape — Poor binders may cause mysterious bang-offs — Template aids in checking replacements.*

By H. E. WENRICH

THE SHAPE of box binders plays a major role in efficient loom production. For example, a binder may be shaped slightly flat at a certain spot along the face, and frequent filling yarn breaks may occur to puzzle a loom fixer. It is not surprising that a fixer may be somewhat confused on a mis-shaped binder, for the loom may have been working satisfactorily; but on changing filling yarn, the filling starts cutting and giving trouble.

Usually, a fixer will start checking the shuttle and yarns; then the shuttle box is given attention; picking and checking, and nearly every point of breakage is looked into before the binder is considered.

Filling-yarn problems, however, are often the least troublesome of many that can occur from mis-shaped box binders. To the binders can be traced box stains, jerk-ins, broken warp yarn, smashes, shuttles flying out, chafed warp and filling yarns, loom bang-offs, and a few other loom problems that can bog down an otherwise efficient section.

BANG-OFFS. When a loom is banging off once or twice on nearly every bobbin change without any apparent reason, inspect the binder for the cause. Generally, if the binder curve is too far to the front, the shuttle is held too long in contact on the pick; and flight across the race may be retarded. At other times, if the binder curve is too far back, the pick may be too quick and the shuttle causes a bang-off when it is completely in the box. This too, may appear confusing to some, especially fixer-learners. If a fixer is acquainted with most loom operations, the manner of the bang-off will often disclose the adjustment required.

An indication of the finer aspects of fixing is found in observing the manner of a loom bang-off when caused by a box binder. Supposing the loom runs satisfactory for an hour or so and bangs off. The loom is started up and runs satisfactory perhaps for half an hour and then bangs off. Picking and checking appear sufficient, and no loose parts can be found that may have any connection with the trouble. So the binder is removed and checked for shape and tension. Often, the source of these annoying bang-offs can be found in the following manner:

If the loom bangs off on the right side with the shuttle only part way in the box, check the left binder and see if the bend is too far to the front.

(Continued on page 196)

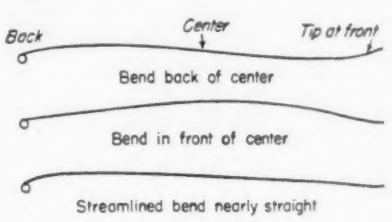


Fig. 1. These are three binder shapes which can be used on either front or back binders.

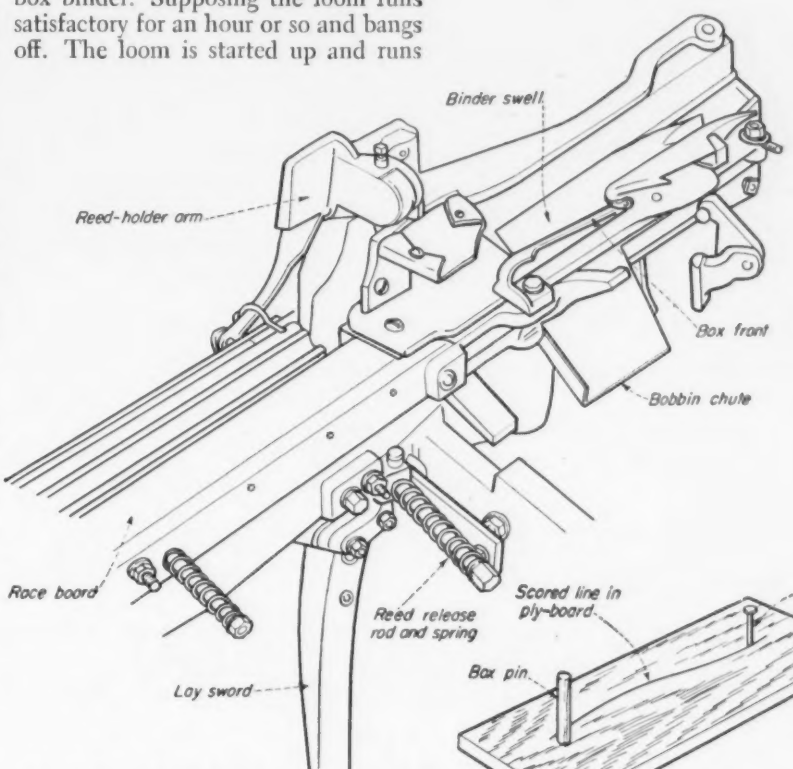


Fig. 2. Keep the leathers on box fronts and the binder swells clean and smooth. Worn leathers cause erratic shuttle flight in addition to other loom troubles.

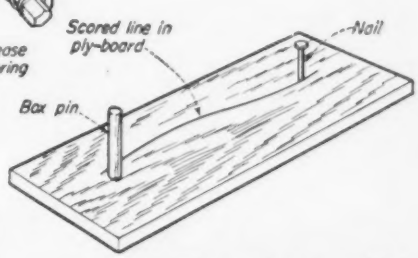
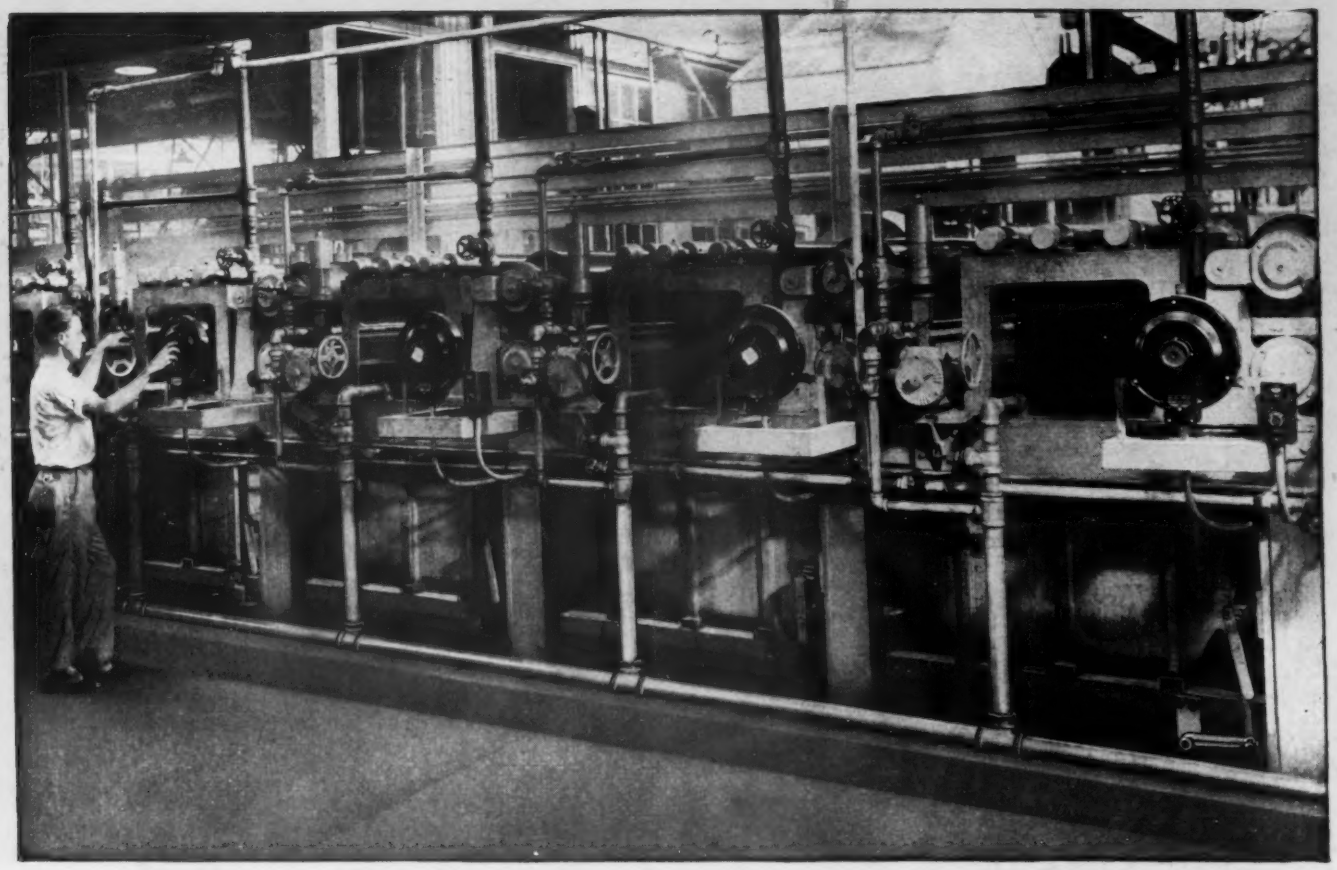


Fig. 3 This template is useful in checking the curves of binders.



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CARDING TECHNIQUES Are Undergoing Change

HIGHLIGHTS: *Control of picker-room fires is aided by return-air condensers, Alabama mill men report—Opener-room changes anticipate mechanically picked cotton—Perforated screens reduce card fly approximately 25%.*

IMPROVED CONTROL in case of picker-room fires is one of the chief advantages of using return-air condensers, according to information revealed at the first postwar meeting of the Alabama Textile Operating Executives, held recently in Montgomery, Ala. Another important advantage pointed out is that fewer laps have to be re-run because the better control of air makes it possible to maintain a more uniform weight of lap.

To obtain these advantages, reported by the overseer of carding at Pepperell Mfg. Co., Opelika, Ala., it was said to be necessary that an efficient set-up of the condensers be obtained and all pipes kept clean.

One mill, which uses a return-air condenser for each of its pickers, reported that it has obtained so much back draft from them that their operation has been unsatisfactory. A report from Mt. Vernon-Woodberry Mills, Tallassee, Ala., indicated that the condensers at this mill do not cause a back draft. By keeping the units cleaned regularly, the mill has obtained satisfactory service from them.

COTTON OPENING. Improvements in cotton-opening equipment, requested in the second of six questions on carding, were reported by three mills. In addition to the changes cited by Langdale Mill, West Point Mfg. Co. (Fig. 1), Pepperell Mfg. Co., Opelika, Ala., has taken 40-in. Buckley beaters out of its pickers and added a No. 12 bale breaker in the opener room. Better results were said to be obtained.

Changes in opening equipment at Mt. Vernon-Woodberry Mills, Tallassee, Ala., were reported by L. D. Sayers as follows:

Old Layout
- No. 4 bale breaker
- Vertical opener
- Vertical opener
- Lattice opener
- Bale breaker

First Unit—New Layout
- 4 blending feeders
- Conveyor
- Lattice opener
- Vertical opener
- Lattice opener
- Vertical opener

Second Unit—New Layout
- 5 blending feeders
- No. 4 bale breaker
- Centrif-air machine
- Lattice opener
- Condenser
- Lattice opener
- Condenser.

COMPRESSED SLIVER. Several changes were necessary at Lanett Mill, West Point Mfg. Co., in order to apply spring compression on card calender rolls, it was reported. Because the compressed sliver was harder to draft, it was found necessary to change the break draft on the drawing frames, open the back-roll setting $\frac{1}{16}$ to $\frac{1}{8}$ in., and increase the weights on the rolls to 14, 16, 18, and 20 lb. Roll settings on the slubbers were also changed.

The chief disadvantage to using compression springs, it was stated, is that thick places in the web go through the compressed calender rolls instead of knocking the ends down. This condition increases sliver variation.

More variation in doffer speed also is

Old and New Opening Layouts

Cotton — 15/16-in. Low Middling

No. pickers — 12

Old Layout	New Layout
5 blending feeders	6 blending feeders
Feed table	Feed table
2 horizontal gyrators	Superior cleaner
Bale breaker	Gyrator
Centrif-air machine	Bale breaker
Vertical opener	No. 12 bale breaker
No. 11 lattice opener	No. 11 lattice opener
	Centrif-air machine
	Vertical opener
	Superior cleaner

Waste Extracted (%)	Old	New
Opener room	2.00	2.78
Pickers	1.67	1.54
Cards	5.37	4.74

Fig. 1. This change in opening equipment at Langdale Mill, West Point Mfg. Co., was made primarily for the purpose of doing more cleaning in the opener room and less on the cards, in preparation for running mechanically picked cotton. Improved running conditions of the stock was attributed to better cleaning and blending. The mill uses a 40-bale mix.

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Bolts, Rivets
Babbitt
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Metal Working Tools and Machinery, etc.

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found when cards are equipped with compression springs. This variation is caused by the lack of uniformity in calender-roll pressure, which causes the amount of driving power needed to vary. Drive belts must be kept tight and in good gripping condition to maintain the speed of the doffer.

Another disadvantage to using the springs was said to be their tendency to cause the journals of the calender rolls to wear. A preference for unweighed fluted calender rolls was expressed. These rolls were said to improve the adverse conditions found with compression springs and to obtain the same amount of sliver condensation.

Compression rolls are installed on all cards at Avondale Mills, Sylacauga, Ala., it was reported. It was found desirable to open the back drawing rolls $\frac{1}{16}$ in. and the other rolls $\frac{3}{32}$ in. No changes were made at the slubbers. Satisfactory results were obtained.

TONGUE-AND-GROOVE ROLLS. Use of tongue-and-groove compression rolls in card coiler heads was discussed by Mr. Sayers, of Mt. Vernon-Woodberry Mills. These rolls have been in use from one to two years, and no changes were necessary at the drawing frames or slubbers. The mill runs 96 drawing frames, 6 deliveries per frame, and creels 55-gr. sliver six ends up. A smaller tube was put in the card coiler in order to lay the sliver closer in the can and make a better package.

More power is needed to operate the cards, and more care must be taken in oiling the calender rolls. No effect was noted in the number of ends down on the spinning frames. The advantage obtained from using the compression rolls was a reduction in the doffing task of card hands and drawing tenders and in the creeling task of slubber tenders.

Increasing the weight of picker laps from 14½ oz. to 16 oz. per yd. and card draft from 95.91 to 105.60 yielded unsatisfactory results at Cowikee Mills, Eufaula, Ala., J. M. Jordan, superintendent, reported. Although the same weight sliver, 58 gr. per yd., was delivered from both laps, the heavier lap caused more waste from torn laps, more chokes on the cards, and knocked out more mote knives. However, there were fewer neps than there were on the lighter lap.

An increase in lap weight from 14 oz. to 18 oz. and in card draft from 102 to 131, to deliver a 60-gr. sliver, was tried at Lanett Mill. The results reported were more lap waste between the pickers and cards and less efficient cleaning at the pickers. The speed of the pickers was kept the same as previously.

A heavy lap is preferred at Shawmut Mill, West Point Mfg. Co., it was reported. Changing from a 15-oz. lap to an 18-oz. lap (card draft 135) to deliver a 58-gr. sliver, the mill has found that it obtains fewer neps and a more even card web. The pickers are equipped with blade beaters in the middle and Kirschner beaters in front. Card lickerins operate between 440 and 450 rpm., and feed plates are set at 0.012 in.

It was pointed out that fewer neps resulted from a heavy lap than from a light lap because the greater load of fibers on the card cylinder permits a better carding action.

PERFORATED SCREENS. Reports on the use of perforated cylinder screens indicated varied results. One mill installed ten perforated screens without changing the settings to the cylinder, and the amount of waste extracted remained the same as with rib screens. The only advantage it reported was that the perforated screens are not so easily damaged as the rib screens.

Another mill, which installed six perforated screens, extracted 20% less waste with the same settings. A third mill reported a reduction of 25% in waste extraction.

A fourth mill, which has operated with perforated screens for more than a year, removed two of the screens at the end of a year for inspection. It found that the screens were not damaged or scarred. The practice at this mill is to set the perforated screens slightly closer than rib screens. Setting points used are: back, 0.012 in.; middle, 0.034 in.; and front $\frac{1}{8}$ in. With these settings, there was an increase in the amount of mote extracted and a decrease of 25% in the amount of fly. No difference in the quality of work has been noted.

Settings were opened slightly at Rus-

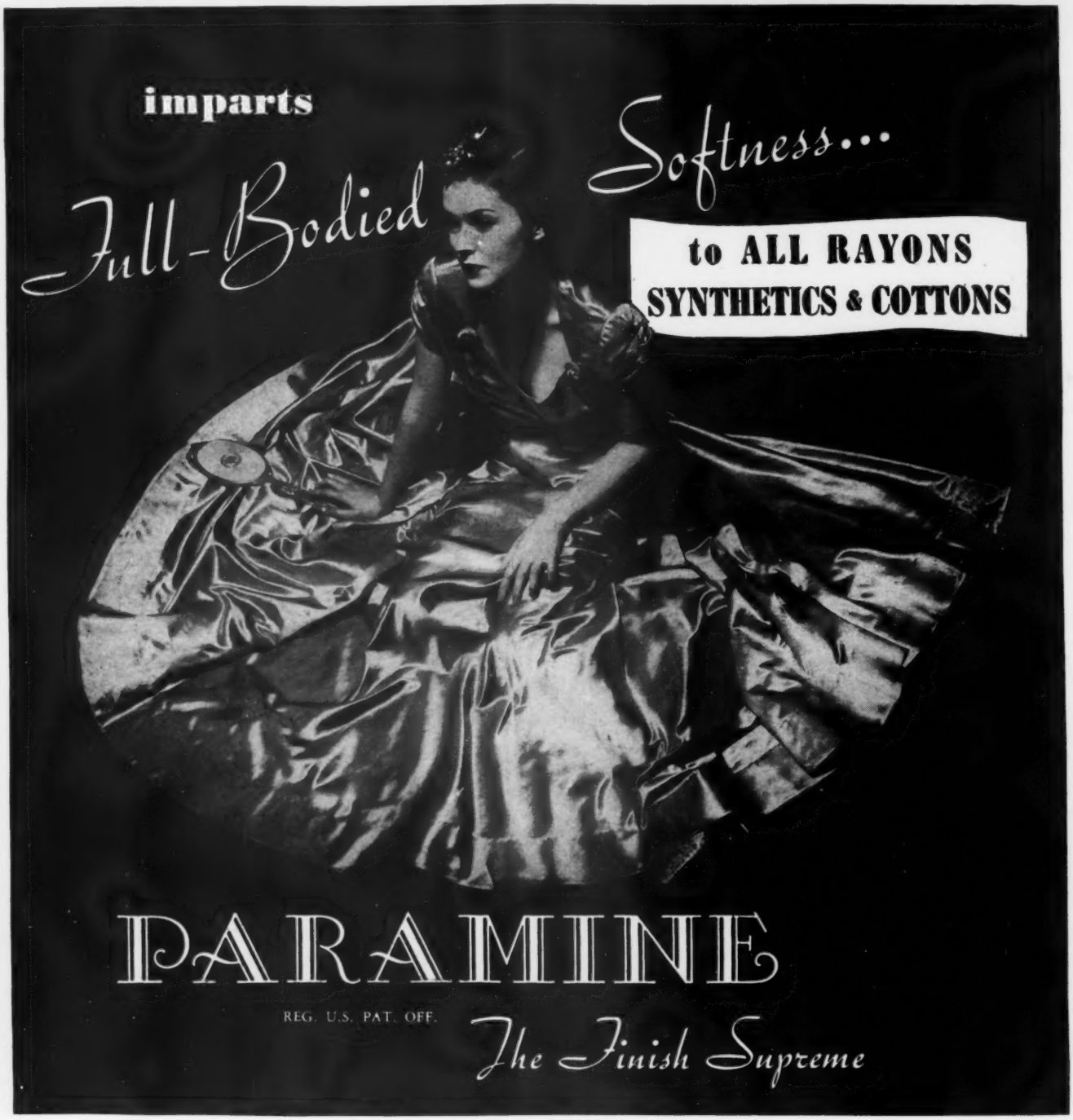
(Continued on page 210)

Data on Cards With Metallic Clothing

No. of cards	174
Years operated	Up to 17
Cotton	1-in. Middling
Lb. per hr.	12.5
Fly and strips (%)	3.38
Neps (100 sq. in.)	43
Stripping frequency	2 wk. (with roll)
Points per in.—cylinder wire	100
Points per in.—doffer wire	110
Wt. base wire (lb. per card)	
Cylinder	275
Doffer	156
Wt. carding wire (lb. per card)	
Cylinder	140
Doffer	93
Grinding time for installing (hr.)	
Cylinder	8
Doffer	4

Setting Points	Metallic Clothing (in.)	Wire Clothing (in.)
Doffer to cylinder	0.005	0.007
Flats to cylinder	0.010	0.010 and 0.012
Lickerin to cylinder	0.005	0.007
Feed plate to lickerin	0.015	0.015
Mote knives to lickerin	0.017 and 0.020	0.010 and 0.012
Screen to lickerin	0.034	0.025
Screen to cylinder		
Back	0.029	0.029
Middle	0.034	0.058
Front	0.068	3/16
Back plate to cylinder	0.022	0.029
Front plate to cylinder	0.034	0.034
Comb to doffer	0.022	0.022

Fig. 2. Exhaustive tests on cards equipped with metallic card clothing at Columbus Mfg. Co., indicate that no loss in quality results from changing to this type of clothing from wire clothing. Grinding the base wire is the most important operation of installing metallic wire, J. M. Jackson, assistant superintendent, pointed out. The base must be as true as possible to ensure proper carding. The carding wire should be ground only enough to yield a true-running surface. Too much grinding will ruin the wire or reduce its operating life.



MILL MEN have found out about PARAMINE. . . . They know that to specify PARAMINE is to assure a highly desirable, wool-like texture for spun rayons, and an extra-mellow softness for all rayons, synthetics and cottons . . . and mill executives are pleased to find that PARAMINE gives this added sales value without increasing and often lowering finishing costs!

Demonstration or further information furnished at your request. . . .

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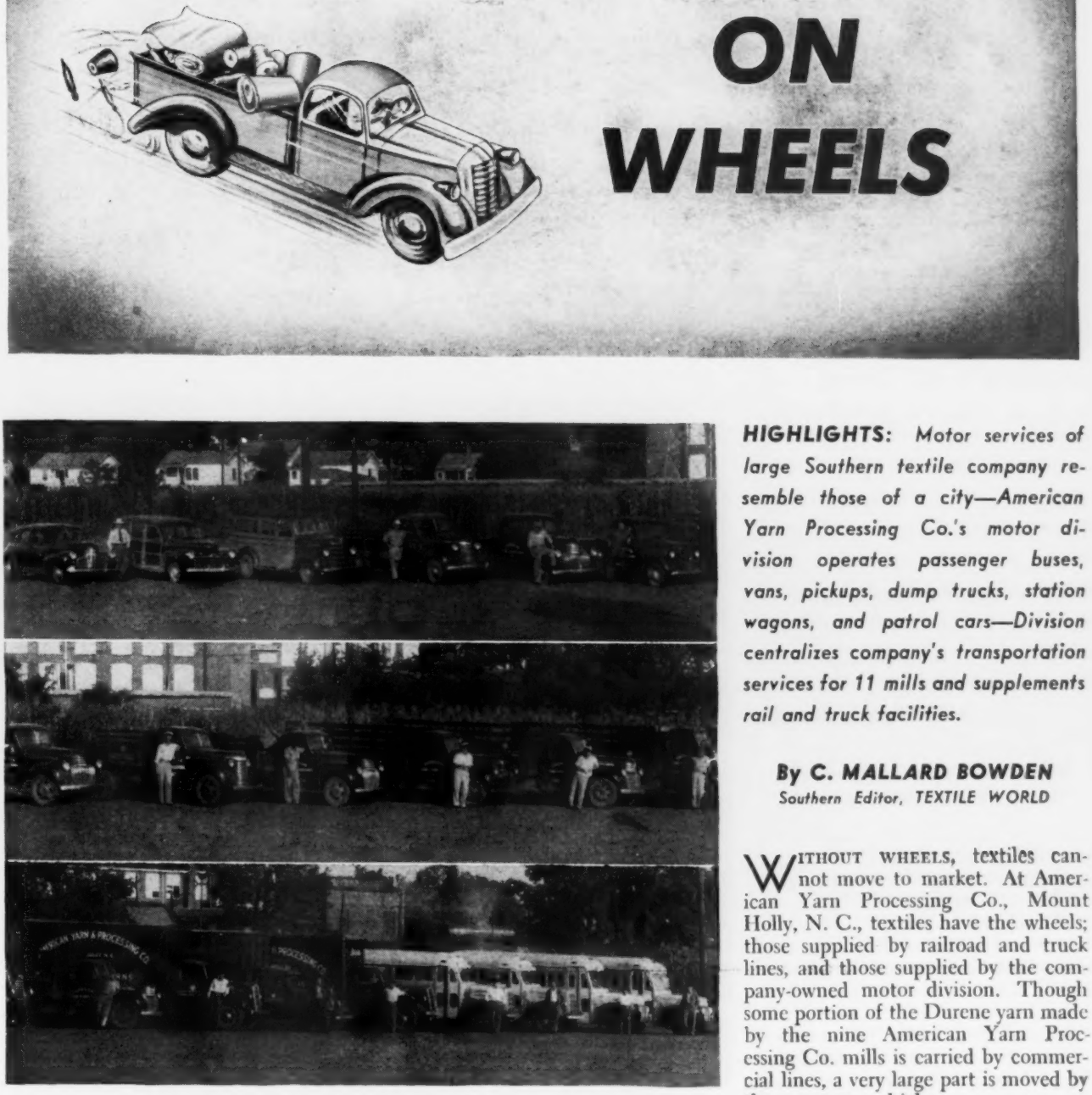
Textiles Move ON WHEELS



Figs. 1, 2, 3. *Lined up for inspection on the fairway of the American Yarn Processing Co.'s golf course are some of the vehicles operated by the motor division of the company. Every type of motor service, from law enforcement to freight, is required. In* **Fig. 1**, *the 1946 Chevrolet patrol car at the left is operated by the deputy sheriff; the 1946 International station wagon is used by the American Finishing mill. (All American Yarn mills will eventually have station wagons or pickup trucks.) Second from left is the Ford station wagon used by B. F. Mitchell, vice-president and general manager; other vehicles to the right are examples of the Chevrolet and Ford pickup trucks used. In* **Fig. 2** *are shown Chevrolet dump trucks, used for garbage disposal, and 3-ton freight trucks (Chevrolet and GMC).* **Fig. 3** *shows three of the vans (Mack and White) which carry around 40 boxes of knitting yarn each; and four Mack and Mercury passenger buses, with 42 and 48 passenger capacities, which transport employees to and from the mills.*

HIGHLIGHTS: *Motor services of large Southern textile company resemble those of a city—American Yarn Processing Co.'s motor division operates passenger buses, vans, pickups, dump trucks, station wagons, and patrol cars—Division centralizes company's transportation services for 11 mills and supplements rail and truck facilities.*

By C. MALLARD BOWDEN
Southern Editor, TEXTILE WORLD

WITHOUT WHEELS, textiles cannot move to market. At American Yarn Processing Co., Mount Holly, N. C., textiles have the wheels; those supplied by railroad and truck lines, and those supplied by the company-owned motor division. Though some portion of the Durene yarn made by the nine American Yarn Processing Co. mills is carried by commercial lines, a very large part is moved by the company vehicles.

Company-hauled freight is necessary because Mount Holly is almost in the center of the vast North Carolina knitting-mill section; and although railroads, such as the P&N, Southern, and Seaboard, are available for Northeast and Southeast hauling, the short-distance hauling of yarn to the knitting mills frequently has to be done quickly, and in directions not immedi-

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Business records show a steadily increasing number of failures. Careful, accurate credit checking is of first importance to avoid serious losses. By the use of our CREDIT GUARANTEE you can eliminate this business hazard and still reach a maximum sales volume.

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Figs. 4, 5. *Behind the motor-division services are the men and equipment necessary to maintain them. Twenty-five employees man the trucks, buses, etc.; and, in the large garage maintained at the American Finishing mill, expert mechanics are available for repairing and overhauling of motor vehicles.* ***Fig. 4*** *shows one of the vans loading cases of yarn.* ***Fig. 5*** *gives a view of a corner of the repair shop, showing some of the tools and equipment required to keep the motor fleet in good operating condition.*

ately serviceable by the commercial lines.

The center of the transportation system worked out by the company is the American Finishing mill. Here, V. U. Grose, superintendent, is in charge not only of finishing operations but also of motor equipment and trucking.

The finishing mill acts as a pool for the many thousand ball warps of combed knitting yarn which are produced in the nine different spinning mills located at Lenoir, Gastonia, Maiden, and Mt. Holly, N. C. After finishing, the yarns are usually coned, boxed, and shipped to the knitting mills in company trucks such as those shown in the illustrations. A small part of the yarns is knitted by the company-owned Holly-Knit mill, the production of which eventually will be finished by the knit-goods finishing mill now in process of construction.

EMPLOYEE BUSES. Freight hauling is but one of the services performed by the motor division of American Yarn and Processing Co., because this large Southern textile company is almost a city in itself, performing all the functions of a municipality and requiring all the motorized services of a city.

While a majority of the company's 2,200 employees live in the villages maintained by the company near the various mills, many of them live in neighboring towns and in the country; some live as far as twenty miles from the mill. In order to facilitate transportation to and from work, the company operates four passenger buses on routes designed to accommodate the commuters. The buses arrive at the mills shortly before shift-changing time and afterwards pick up the outgoing passengers and return them to their homes.

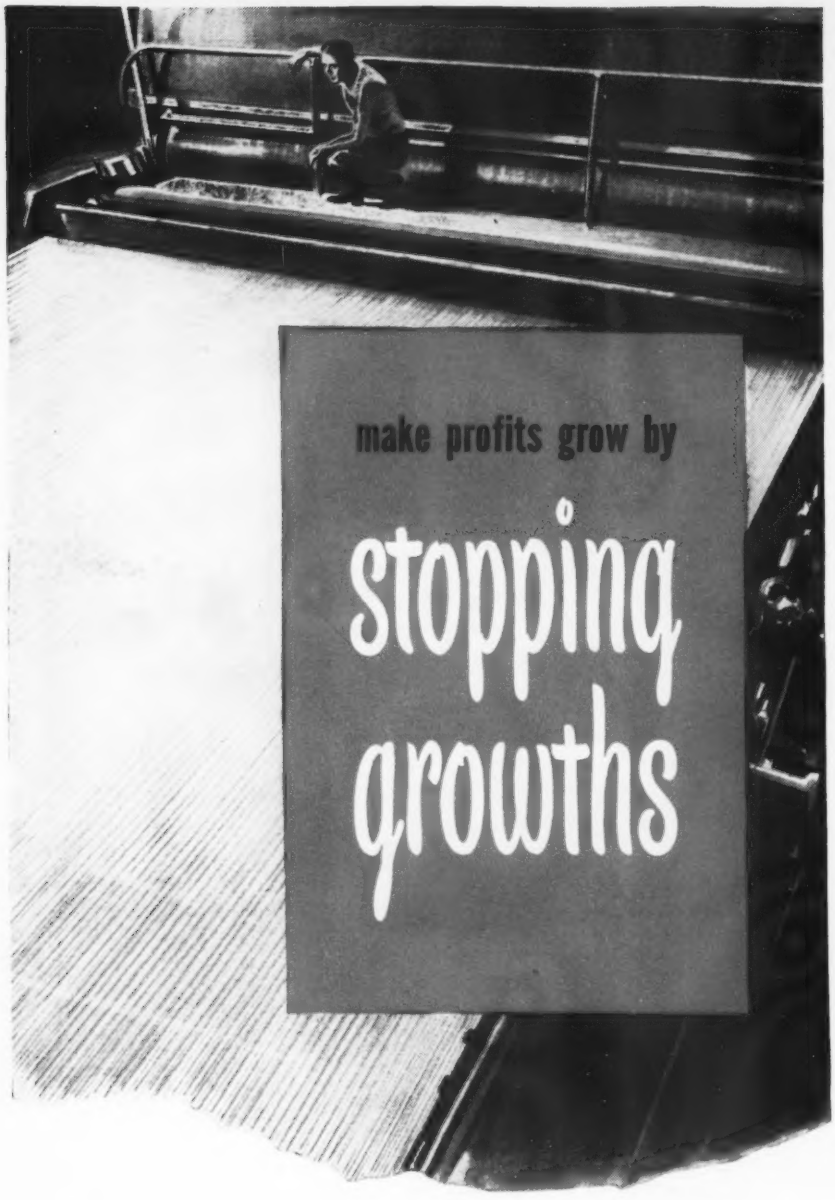
Motor transportation is required by the supervisory personnel at the central office in Mt. Holly and at the individual mill offices. Production orders, reports, and analyses must go out to the individual mill offices; and proper returns from the individual mills must be made to the central offices. Costs must be assimilated by the accounting department; safety, health, personnel policy, and other functions of the personnel department must be carried to the individual mills; and, finally, the weekly newspaper, a service performed by the personnel department, must reach the various mills. To supply the wheels for these services, the motor division uses station wagons and, in some cases, pick-up trucks.

As soon as present purchases are completed, pick-up trucks or station wagons will be supplied at all the American Yarn and Processing Co. mills. Law-enforcement agencies are also supplied with motor equipment by the company; the deputy sheriff in Mt. Holly, for example, is furnished with a patrol car which is comparable to the equipment usually found in city police departments.

MAINTENANCE. Other trucks are used by the maintenance department, which is largely concerned with building and construction, village repair, street maintenance, etc. Two dump trucks are utilized for garbage disposal. One large 3-ton truck is used by the machine shop at the American Finishing mill; and similar motor facilities are supplied to the shops of other mills, since machine purchases or special repairs must be made quickly.

Behind the varied functions of such an extensive motor division are the men who make it possible and the special equipment and supplies required by these men. A total of 25 employees is necessary to man the various motor vehicles operated by the motor division. In addition, the company operates a garage and gas station at the American Finishing mill; and, here, the motor division has repair equipment and automobile mechanics to keep the wheels turning.

Few textile mills use a wider variety of automotive equipment than does the American Yarn and Processing Co.; but many have larger fleets, especially of trucks. It is difficult for a group of inter-related mills to operate without their own vehicles. Integrations are causing many mills to reconsider their transportation needs.



DOWICIDES curb losses of paper

In paper manufacturing—and in other industries where micro-organisms damage materials and decrease output—Dowicides turn losses into profits.

In paper mills, slime flourishes. And slime damage is expensive. Slime causes machine "breaks," defective paper due to spots and holes, and excessive wash-up time.

Conditions fostering slime growth vary. So do organisms causing slime—algae, fungi and bacteria. Control calls for careful analysis of slime types and application of proper killing agents.

Because of their broad effectiveness, Dowicides are widely used in slime control. They cut losses, too, by prolonging wet felt life, preserving adhesives and preventing mildew on lap stock. And they make paper, boxboard and fiber board mold-resistant.

In paint, textiles, lumber, leather—wherever mold, termites or bacteria attack—ask Dow to select a Dowicide for your specific use.

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CHEMICAL COMMENTS

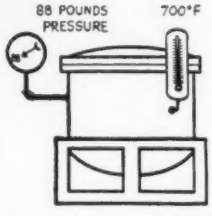
An Effective Thickener for Improved Dye Printing

Methocel, Dow cellulose derivative, has demonstrated unusual possibilities as a dispersing, thickening, and binding agent. One of its important applications is in textile printing. As a thickener for fast color salts and diazotized bases for printing on naphthol prepared grounds, it yields prints of exceptional brightness, smoothness, and sharpness of mark with greater penetration and efficiency of dyestuff. Methocel can be used in dyes either for machine or screen printing.

Coating Fabrics for Chemical Resistance

Saran F-122 Latex, a new Dow material for the textile industry, is used as a coating, sizing, impregnating and laminating agent in the treatment of fabrics. Coated with Saran Latex, fabrics are particularly well suited for industrial use where chemical resistance and durability are important. They can be made resistant to water, oils, greases, gasoline, acids and alkalies in the making of conveyor belting, tarpaulins and other products. Yarn and thread can also be sized with Saran Latex, making them waterproof and resistant to picking and linting.

Flexible Heat for Paint Processing



Flexible heating systems are a necessity to many paint and varnish firms, where high-temperature processing requirements vary widely. In one Midwest varnish plant, where processing temperature requirements vary from simple heating to complex sequences of heating and cooling, Dowtherm, the high-temperature, low-pressure heat transfer medium, has been installed. With this indirect heating system temperatures can be adjusted easily for every specific job. The company uses a 3,000,000 btu/hr. Dowtherm vaporizer for heating and an independent liquid-phase Dowtherm cycle for cooling. Simple controls permit the two cycles to be coordinated for a variety of temperature combinations.

DOW
CHEMICALS INDISPENSABLE
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SPINNING REFINEMENTS
Favored by Alabama Mill Men

HIGHLIGHTS: *Cleaning and control of air are essential to successful spinning-room operation—Short synthetic aprons have one-third longer life than leather aprons—Non-sloughing cam reduces spooler throw-outs one-third.*

PROPER CLEANING is an important factor in spinning-room operation, mill men agreed at the recent meeting of the Alabama Textile Operating Executives.

The cleaning routine at Lanett Mill, West Point Mfg. Co., reported by J. W. Hames, consists of blowing overhead, starting the traveling cleaners, picking lint from the frames, starting the frames, and getting up ends with the frames running. This mill runs 7/8- and 15/16-in. cotton and spins 14s to 17s yarn.

The cleaning schedule at Avondale Mill, Pell City, Ala., spinning 9.50s yarn from 1-in. cotton, was given by A. D. Moore as follows: Spinners, running ten sides each, do all cleaning on the frames. The first- and second-shift spinners each pick one-half the rolls every day. The third-shift spinners pick all front rolls each day but do not clean any steel rolls. All roll picking is done by hand.

All blowing off is done at night. Two vacuum systems of cleaning were tried, but they were discontinued because they would not pick up the lint. The types experimented with were a floor-vacuum-cleaner type and a card-stripper type. Neither of them was effective in cleaning rails, underneath the frame, etc.

(*Continued on page 192*)

Schedule of Cleaning

Fine Yarns	
Cotton	— 1 1/16-in. Middling
Yarn No.	— 32s, 40s, 60s
No. frames	— 114
Cleaning (divided equally by shifts and sections)	
Blow overhead	— each 8 hr.
Clean tops of creels	— each 24 hr.
Pick rolls	— each 24 hr.
Wipe roll beams	— 1st and 3rd shifts
Wipe underneath thread guides	— once per wk.
Blow off lower parts of frames	— each 4 hr.
Wipe rails	— twice per wk.
Coarse Yarns	
Cotton	— 1 in. to 1 3/32 in.
Yarn No.	— 3.05s to 7.10s filling 7.90s to 16.00s warp
No. frames	— Approximately 200
Cleaning	
Blow overhead	— once per wk.
Blow off frames	— each 16 hr.
Pick top rolls	— each 8 hr.
Pick steel rolls	— once per wk.
Brush rails	— each 8 hr.
Clean tops of creels	— once per wk.

Fig 1. These cleaning schedules are used by two mills that run different types of goods. Discussion by mill men attending the meeting of the Alabama Textile Operating Executives indicated that there is little standardization of cleaning practices.

New officers of the re-activated Alabama Operating Executives are:

E. H. Lehmann, superintendent, Langdale Mill, West Point Mfg. Co., gen. chmn.; **A. D. Elliott,** Huntsville, Ala., vice-gen. chmn.; **Ben H. Crawford,** West Point Mfg. Co., West Point, Ga., sec'y. and treas.

Members of the executive committee are:

H. B. Bergfeld, superintendent, Bemis Bro. Bag Co., Talladega, Ala.; **A. H. Randall,** general superindentent, Alabama Mills, Inc., Birmingham, Ala.; **C. H. Moody,** superintendent, Dwight Mfg. Co., Alabama City, Ala.; **Robert Horsley,** Pepperell Mfg. Co., Opelika, Ala.; **Wilson Patterson,** Mt. Vernon-Woodberry Mills, Inc., Tallassee, Ala.; **T. S. Harris,** general superintendent, Russell Mfg. Co., Alexander City, Ala.; **H. J. Lanier,** general superindent, Cowikee Mills, Eufaula, Ala.; **J. Byers,** Avondale Mills, Pell City, Ala.

Two Mills Give Data on Non-Sloughing Cams

Mill No. 1	
Cotton	— 1 in. to 1 3/32 in.
Warp yarn nos.	— 8s to 20s
Wt. of yarn on bobbin	— 8 oz. (20% less than with regular cam)
Size of bobbin (in.)	— 9¼ x 1 1/8
Size of spinning ring (in.)	— 2½
Spooler drum speed	— 1,600 rpm.
Yd. per min. spooled	— 1,200
Mill No. 2	
Cotton	— 1-in. Middling
Warp yarn nos.	— 21s to 30s
Yarn on bobbin (yd.)	— 21s — 36,540; 25s — 43,334; 30s — 44,226 (same as with regular cams)
Size of bobbin (in.)	— 8 x 7/8
Size of spinning ring (in.)	— 2
Spooler drum speed	— 1,765 rpm.
Yd. per min. spooled	— 1,270

Fig. 2. Mill No. 1, weaving heavyweight goods, and Mill No. 2, weaving lightweight goods, both reported that non-sloughing cams have aided them in reducing the amount of waste yarn at automatic spoolers. Mill No. 2 stated that it has approximately one-third fewer spoolers throw-outs.

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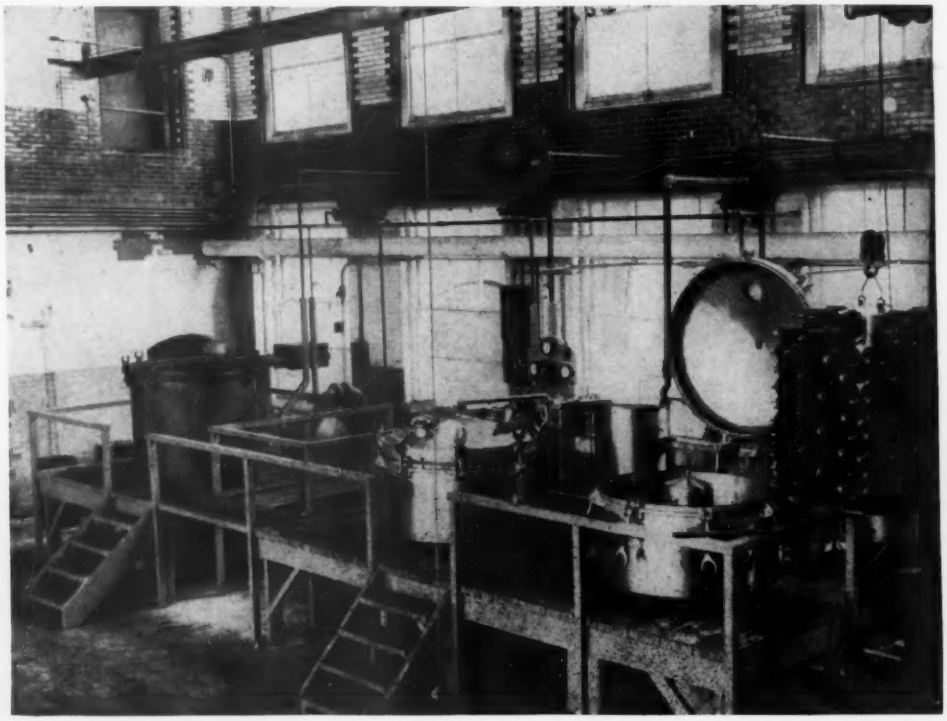
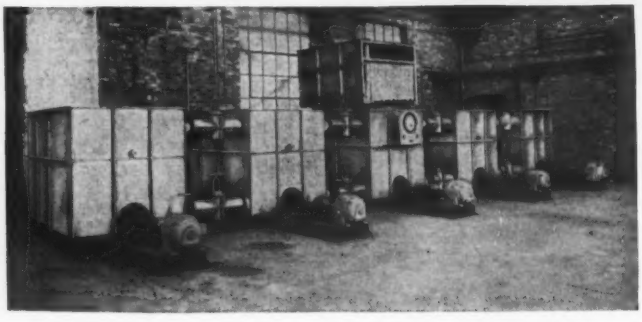
package dyeing installation with closed pressure extractor in complete cycle on the same material carrier. Features: Horizontal spindles adaptable to pressure extraction. Alternate use of cones or cheeses. Even temperature maintained throughout bath. Continuous rinsing — with flow in either direction. Balanced 6-way valve for reversing dye liquor.





THE LEADING WORSTED SKEIN DYEING MACHINE

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California FINISHING PLANT Expands 150% Since 1941

HIGHLIGHTS: *National Dyeing & Finishing Corp., of Los Angeles, cannot keep production capacity up to demand—"On-the-spot" service to rapidly growing California garment trade accounts for large growth—Gray goods must come mostly from East and South—Production has doubled since end of war and is expected to increase another 70% when equipment now on order is installed—Company hopes to build 150,000 sq. ft. line-flow plant when sufficient materials and equipment are available.*

By RICHARD L. BEAN

Fig. 1. Plant of National Dyeing & Finishing Corp. is one-story brick building except for second-floor office section.

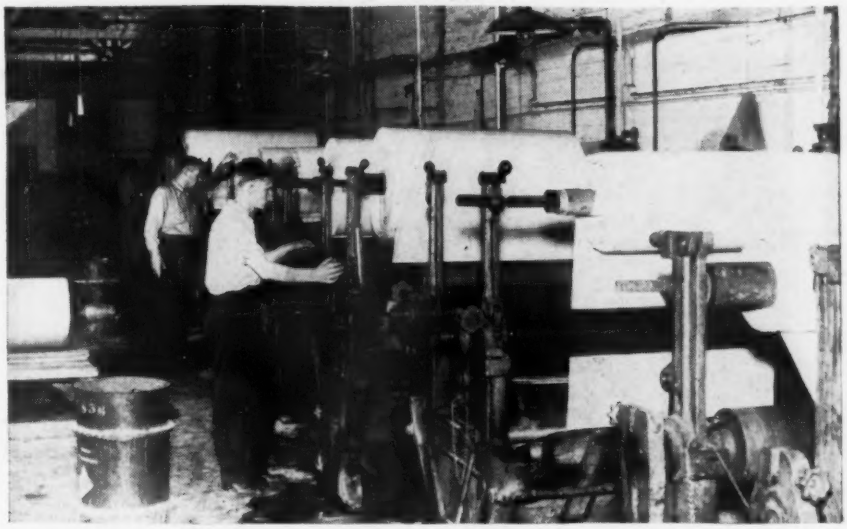

Fig. 2. Increasing number of jigs from 11 to 15 machines, arranged in double row with overhead conveyor down center aisle, and addition of three more dyebecks will increase plant capacity 35 to 40%.

UNDERTAKING ITS THIRD expansion program in five years and looking ahead to the not-too-distant day when its fourth and largest forward step will be possible, National Dyeing & Finishing Corp., of Los Angeles, has, almost from the time its doors first opened, been confronted with the problem of matching production capacity with a growing demand.

Although President Russell B. Coleman describes his company as a "peanut stand" in comparison with Eastern dyeing firms, National has chalked up working-space percentage increases that would stir envy in the heart of any operator. Currently, the Los Angeles dye house has 30,000 sq. ft. of plant space in a modern, fireproof, one-story brick building, plus 15,000 sq. ft. of warehouse, through which will roll this year an anticipated 10,000,000 yd. of cloth destined to wind up for the most part under the needles of West Coast garment makers and industrial textile fabricators.

That total of 45,000 sq. ft. is a 150% increase over the 18,000 sq. ft. available when National went into operation March 4, 1941. The latest major increase was addition of the 15,000 sq. ft. of warehouse space.

As for the future, National looks to the day when building limitations and equipment delays will have relaxed sufficiently to allow construction of a systematically laid-out plant of approximately 150,000 sq. ft.

National's engineers and overseers have aimed all during their growing pains to keep sight of the need for a smooth flow of production, from the door where delivery trucks unload gray goods to the same door where dyed and finished cloth is hauled away to be turned into California fashions, towels, sleeping bags, carpenter aprons, or for outdoor furniture use. Foresight has been necessary in order to visualize how to use available space most efficiently for immediate needs

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and yet provide room for new equipment expected to arrive in the next few weeks or months.

NEW EQUIPMENT ON WAY. The present production potential of 12,000,000 to 15,000,000 yds. (on a three-shift basis) will jump to between 17,000,000 and 20,000,000, Mr. Coleman reported, when the 11 jigs now in use are augmented by four more ordered and "on the way," and when three more dyebecks are added to make a total of six. Along with these additions are coming new accessory equipment, doubled boiler capacity, more tubers and mercerizers, and, possibly a little further away, special bleachery equipment.

National's first expansion, before war years, afforded doubled production. Output remained steady during the war because of manpower restrictions imposed despite the fact that the company averaged 65% war-priority work and at times, hit as high as 90%.

But in the postwar period, capacity has once more been doubled and should go even 70% higher when the new equipment now on order is installed, according to plant officials. National now employs 100 men and women, split between two 9-hr. production shifts daily.

Unable to obtain warehouse space contiguous to the plant, the company has been compelled to take over a building several blocks away, Mr. Coleman explained, by way of illustrating his firm's desire ultimately to have a scientifically designed institution. But the handicap of nonproximity of warehouse stocks has been handily reduced by planning shuttle trips for pickup and delivery crews, having them stop by the warehouse on jaunts to or from customers' factories.

Installation of their Morrison Machine Co. Sanforizer in December, 1945, was the realization of a long ambition, for it is one of two machines of its kind west of St. Louis, Mo., the other one being in Texas. Of latest design, the 60-in.-drum shrinker has air guiders on the let-off end, electric guider on the clip expander, duplex range and blanket-centering device, and automatic shoe-lifter.

Although large-scale commercial dyeing is a sort of orphan industry on the West Coast, procurement of dyes is no problem; in rush cases overnight delivery is possible from stocks maintained on the Pacific slope by Eastern manufacturers.

GRAY GOODS SOURCES. A major factor in the growth of National is "on the spot" convenience for the rapidly growing garment trade which, in Los Angeles and nearby cities, is attempting to satisfy the nationwide market for California creations. Along with the garment manufacturing, numerous enterprises have appeared in recent years to utilize cloth for industrial purposes, especially heavy duck materials. How much the demand will increase in future years, nobody knows. But developments in late years would tend to indicate greater scope for the textile industry in all its ramified forms in Southern California.

Gray goods now come almost exclusively from the East and South, with some materials shipped to Los Angeles from Mexico and a bit from a new mill in Southern California. Another possibility to be considered is whether contemplated experiments in milling California's San Joaquin Valley long-staple cotton will prove practical on a large scale. Higher labor costs plus higher installation-of-machinery costs, owing to cartage expense from the East, are factors opposing assured economies from elimination of twice-across-the country shipping expenses.

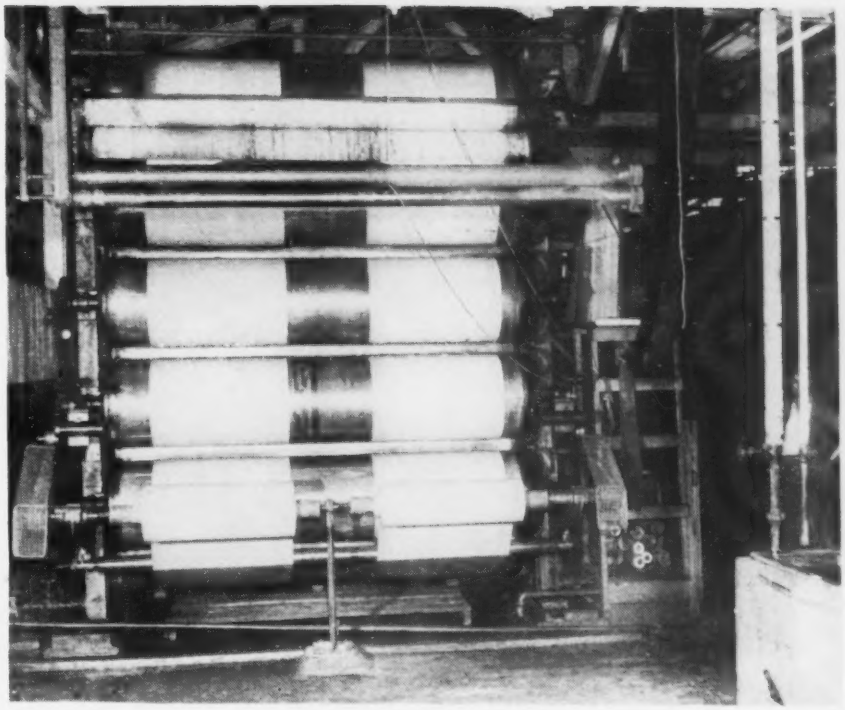

Fig. 3. Can dryers, as illustrated above, and other heavy equipment have been carefully located with respect to present and future plant layouts in order to eliminate expensive relocating.

EXPERIENCED PERSONNEL. Four men organized National and have directed its efforts to keep pace with the Southern California textile industry. Besides President Coleman, they are Edwin J. Kraft, vice president and sales manager; Earle E. Parkhurst, treasurer and production manager; and Donal J. Peacock, secretary and office manager.

Robert W. Kenyon is plant superintendent and chemist. Bernard Landsberger is dye superintendent; Felix Smith, formerly of Rockingham, N. C., is in charge of finishing and Sanforizing.

Mr. Coleman, who obtained his early experience at the Caron Spinning Co., Rochelle, Ill., and later was associated with California Hand Prints, Hermosa Beach, Cal., is obviously proud of his "peanut stand" even though he speaks in humble respect of the "big boys back East."

"Our output is like a mere raveling, compared with the millions of yards handled back East," he said "but we have made the best use we could of what we have. We have attempted to maintain a uniform growth and avoid making expansions until we are sure that full use can be made of increased facilities.

"Oh, we could improve the arrangement of our plant, if we were starting from scratch again, but we have accomplished our enlargement program so far out of profits, without additional capitalization, and . . . well . . ."

It looks as if National, by gearing cautious engineering planning to growing production needs, can have its peanut and eat it, too.

Unless your waste bins contain only the very poorest grade of unavoidable waste, you are losing money on every pound you sell. For you know the best price you can get for waste fibers never equals the price you get for fibers in the form of finished products.

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Our service does not end with these recommendations. Every shipment of waste received from you will be analyzed. If at any time the grade is too good to be classified as unavoidable waste, you will be notified promptly and helped to find the correct remedy.

Get in touch with us and arrange for a Rayco engineer to make a free survey in your mill.

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RAYCO **COTTON & SYNTHETIC FIBERS**

Woolen-Mill Efficiency Raised by SPARE HANDS

HIGHLIGHTS: *Extra workers eliminate production loss due to absenteeism—Cost of extra help is more than paid for out of increased efficiency—Each mill must study own organization to determine number of spare hands needed—Card room is department most commonly needing extra workers.*

By GUSTAV ZELLNIK
Consulting Editor, TEXTILE WORLD

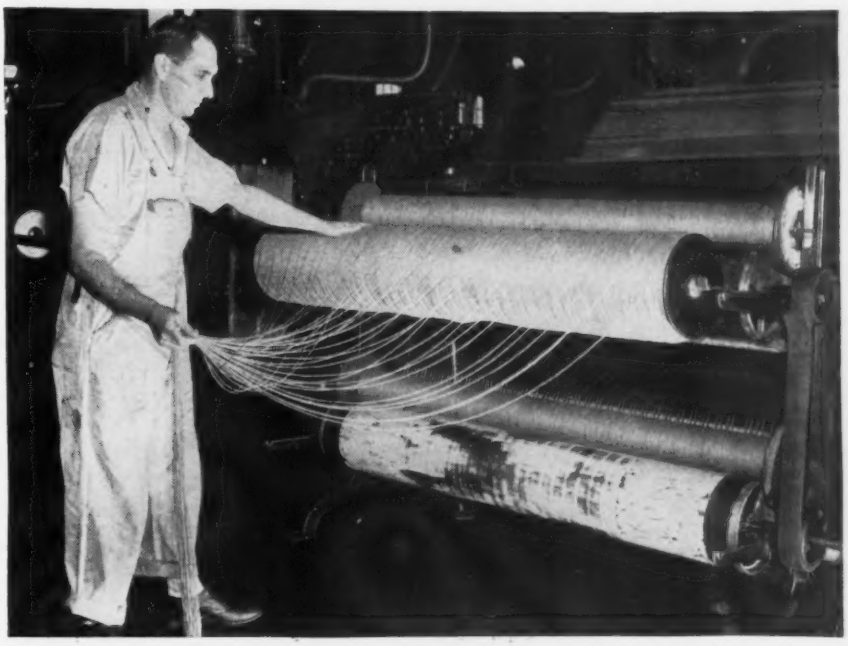
DECREASE in production efficiency can sometimes be caused by attempting to save in the wrong spot. For instance, a certain woolen mill with nine sets of cards and 48 looms was usually short one person in one or more departments. That particular mill had, in each of the three shifts, a good working crew to cover the needs for running the machines efficiently. But, when a card-room front tender was out, it often happened that a unit was shut down because nobody was available to fill that place. In the first shift, one could get around when somebody stayed out, but in the second and third shifts there was a standstill on those machines where the absentee should have been working. Therefore, it is a good idea to have in every shift one man more than needed —a man who is a so-called all-around man, or spare hand, and can pitch in wherever his help is required. Of course, one spare hand can be considered sufficient only if it is in accordance with the number of machines in operation. The bigger the mill, the more spare hands in each shift are required in order to fill the needs and insure smooth running of the department without interruption. For instance, a mill having 12 sets of cards and with adequate spinning frames and looms should have one man in reserve for each department for each shift, especially in the second and third shifts.

Suppose, in a room with 12 sets of 60x60-in. cards, three cards are operated by one front tender. What would be the loss in production should one front tender be absent, figuring the production of a 2-run basis? The fact that four cards can be operated by one front tender in case of an emergency has been purposely eliminated from consideration because it is assumed that the mill wishes to maintain quality and does not believe in burdening the supervisor more than is necessary. Making 2 run at 85% efficiency, a card will produce about 350 lb. in 8 hr., which means that the loss on the three cards tended by that one man will be about 1,050 lb. per shift. Suppose, in 250 working days yearly, that we have one man absent only 10% of the time. The loss would amount to 26,250 lb. yearly for one shift. In the blending department, it should not be necessary to have a reserve man as there are usually sufficient blends prepared in advance so that the absence of one man would hardly be felt. Spinning room, too, should be able to manage when short one man because it usually can absorb the extra spinning equipment among the remaining operatives.

The cardroom, however, which is the soul of a woolen mill, can never make up for a missing worker; the absence of one man is a real obstacle in the path of good production. Converted into money at 38¢ per lb., 26,250 lb. of 2 run means $9,975.00 for commission spinning alone, which amount would be definitely lost. Let us assume that a reserve man would get a weekly pay envelope of $45.00, which amounts to $2,340.00 yearly. Is it not worthwhile to pay such a premium to secure uninterrupted production, not to speak of the bolstered morale of the help?

The loss of weave-room production can easily be figured out, should one weaver who operates four automatic looms be absent. How many yards could be woven during his repeated absence?

Therefore, the necessity for having spare hands in certain departments can not be stressed too strongly. It is up to the management of the individual mill to decide the number of reserve men needed, taking into account the departments where most of the absenteeism occurs and the type of help most essential for their special purpose. Having a few more men on the payroll than are actually needed will be a big help in maintaining uninterrupted, steady production, probably without raising the cost of production at all.



In a woolen card room, running 2-run work with three cards per front tender, the loss in production is over 1,000 lb. per shift when one worker stays at home.

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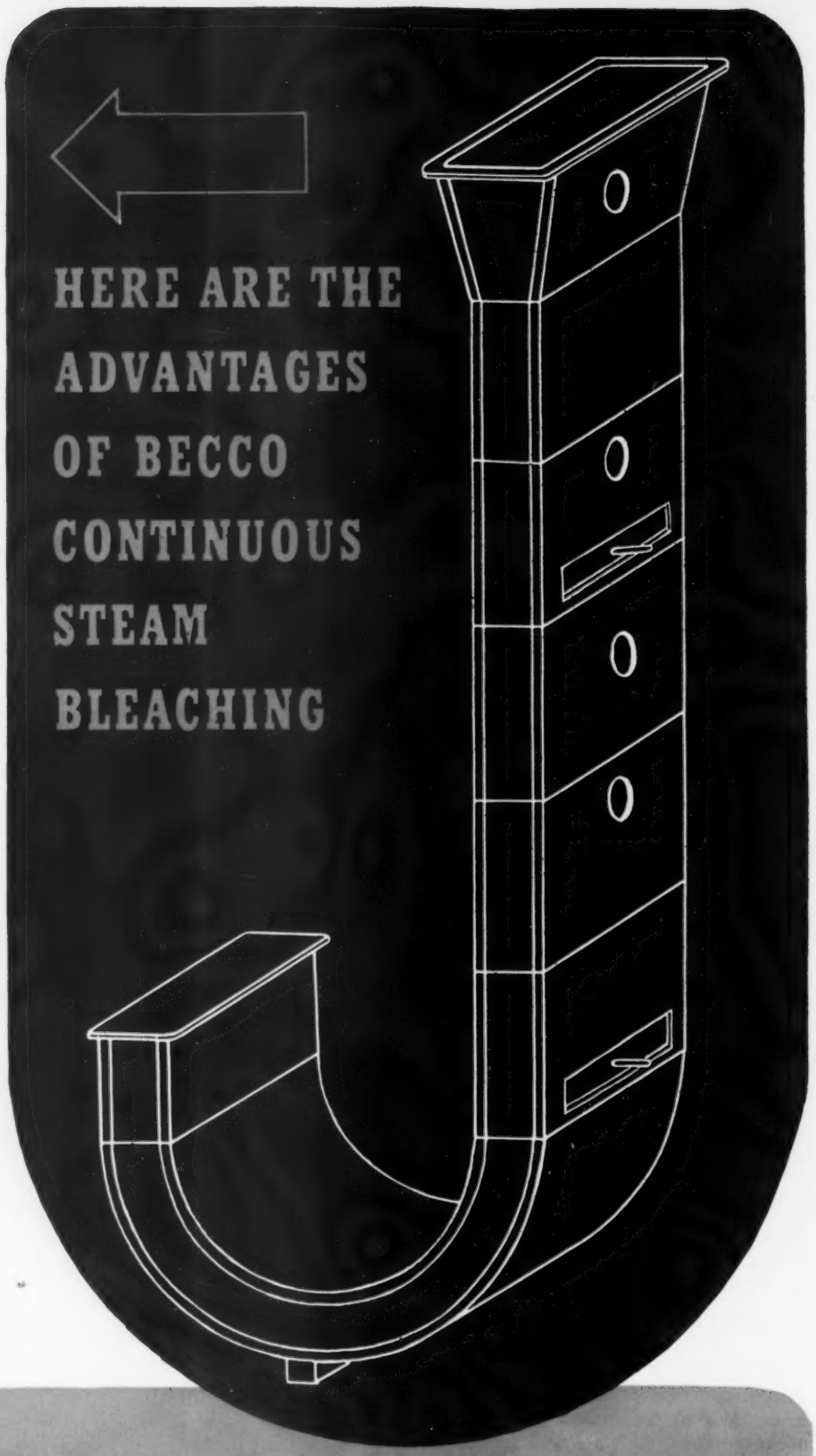

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WARP KNITTING Poses Technical Problems

HIGHLIGHTS: *Mills solve creel and tension problems on Cidega differently—Varied fabrics, from dish cloths to curtains, obtained—Cotton, worsted, nylon, rayon, and woolen yarns used.*

By O. B. GRAHAM

WIDESPREAD INTEREST in various warp-knitting machines is being shown by both yarn and knitting mills. The production and experimental work now being done by the mills on the Cidega "loom" is no exception. The usefulness of the Cidega as a fancy-fabric machine has always been claimed; and now that novelty fabrics are again more valuable, mills are interested in discovering the versatility of the Cidega. Some mills are operating the machine experimentally; others are in production.

The operation of the Cidega loom at one Southern mill indicates that, where creeling and tension problems are overcome, a variety of yarns and fabrics may be knitted successfully. Experience with warp knitting at this mill also shows that there are manufacturing advantages in the field to either the cotton mill which produces mixed-fiber yarns, or to the knitting mill which has a varied-yarn supply.

The Cidega loom, which is a flat-bed warp-knitting machine, knits scarfs, dish cloths, bedspreads, hammocks, curtains, fringe, and other fabrics. Cotton, worsted, spun-rayon, filament-rayon, nylon, woolen, and other yarns are used; and mills point out that asbestos and Fiber-Bonded yarns will be experimented with in the future, particularly in such fabrics as curtains, mats, etc.

YARNS USED. The details of the yarns used in two fabric constructions illustrate the design versatility of the Cidega. The constructions, employing two of the eight "weft" bars, are the same, the respective qualities of the two cloths being obtained from the yarns. The first fabric is used for dish cloths and contains 4/2 cotton yarn in warp and filling. The 4/2 yarn is speeder-spun with 8.00 t.p.i. and is plied on a cotton twister with 26 t.p.i. The second fabric is used for table cloth or scarfs and employs 900-

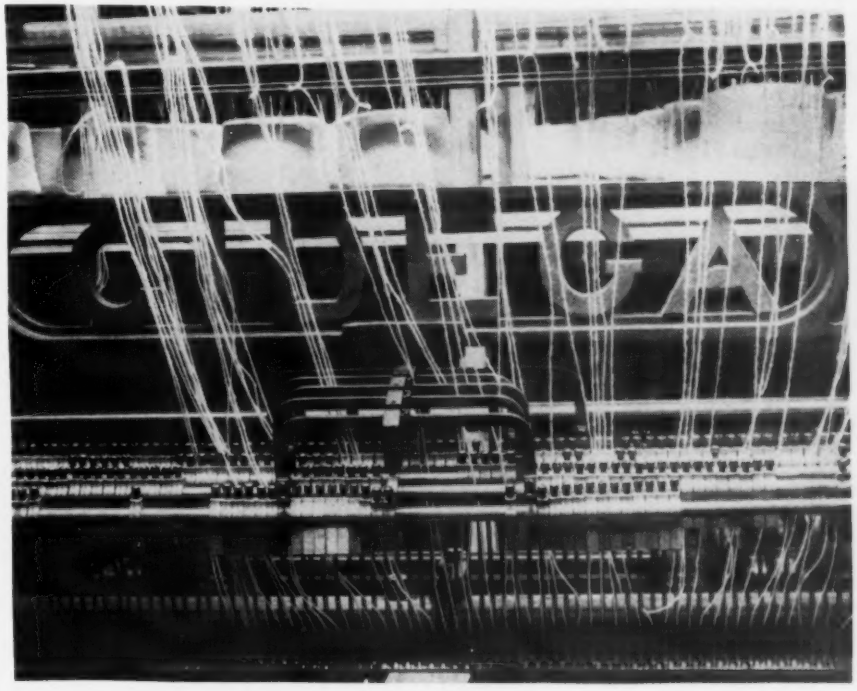

Fig. 1. A closeup of the Cidega warp-knitting machine shows the method of drawing in the filling yarns. Filling cones are creeled behind the machine, and yarns are brought over a glass roll at the top of the machine, and thence to "weft" (filling) bars as shown in the photograph. Note that filling bars have no guides for the yarn, and the threads merely pass into the filling tubes visible at the bottom of the photograph. The lack of guides at these points allows considerable play of the filling yarns within and around the movement of the bars, yet this characteristic is said to be of no consequence so far as efficient operation is concerned.

The warp threads are shown at the knitting point, but the method of drawing them in is not visible. The threads are drawn under the machine through tensions (some mills install their own tensions), around the front of the machine through the warp guides. Warp threads only make the stitch, the filling threads are merely laid into or between the stitches formed by the warp threads.

To lay in the filling threads, lateral motion of the "weft" bars is required, which is accomplished by the chain-barrel pins shown in Fig. 2. The motion is adjustable so that different lengths of filling may be laid as required. By varying these lengths (as well as colors), filling patterns are possible. Circles, diamonds, and blocks, as well as irregularly shaped patterns are being made by mills.

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den. acetate in the filling, 3s worsted in the warp.

Elaborate patterning effects may be obtained, such as circles, blocks, and diamonds, as well as irregularly shaped figures. See Fig. 2 for illustration of the patterning mechanism.

PRODUCTION PROBLEMS. Since experience with the Cidega is relatively new, mills undertake considerable production-engineering and experimental work in order to arrive at the best possible methods of operation under their respective conditions. Complete experience is not widespread, and varying reports are encountered from the mills, particularly on the subjects of creels and tensions required.

Normally, the machine carries two creel boards upon which small bobbins of yarn are placed. The board for filling bobbins is located just above the camshaft (shown in Fig. 3). The warp creel is located under the machine, or just below the cloth roll. In these positions, the yarn creels do not interfere with the cloth roll, and the latter may be removed easily by one man.

The space provided for creel packages is extremely limited when the creel boards are used in these positions. The space limitation requires the use of small bobbins of yarn; and some mills, in order to increase the package size, have built special creels for the machines. The large table-top creel partly shown in Fig. 2 is one method worked out by a mill for large-package creeling. However, this method is not entirely satisfactory, since the position of the creels interferes with the doffing of rolls; doffing requires the services of two men for disengaging the roll.

Another method worked out by a mill provides a V-type creel, such as found on cotton warpers; and the mill management believes that this type creel, with individual-end tension, collecting eye-boards, and warper-type stop motions for the warp threads, will solve the creeling problems.

Another mill is considering the installation of a beam creel for both warp and filling yarn. It believes that beams, either mounted free of the machine or synchronized with the machine motion, would satisfy operating conditions. By raising the filling ends to an overhead roll and thence to a collecting eye-board and by running the warp threads under a platform provided for access to the cloth rolls, the mill believes that the best possible arrangement of creel with respect to cloth accessibility would be provided.

In event table-top creels are provided, it is very necessary that felt pads be inserted under the cone positions. Otherwise, ends will catch under the cones and cause breakage.

The matter of warp tension is important because of the effect it has on the stitch. Should undue tension be obtained on any warp thread, that thread will bind and close the latch of the needle, thus preventing a stitch on that particular needle. The stitch is made by the movement of the warp guides. Each guide makes a complete circuit around the needle hook in order to position the yarn for a new stitch. Ordinarily, the latch of the needle will not close prematurely because of the piano-wire arrangement along the length of the needle bed. However, the warp threads are unaffected by this wire; and should these ends become tight, the pressure of the thread upon the needle will cause the latch to remain closed.

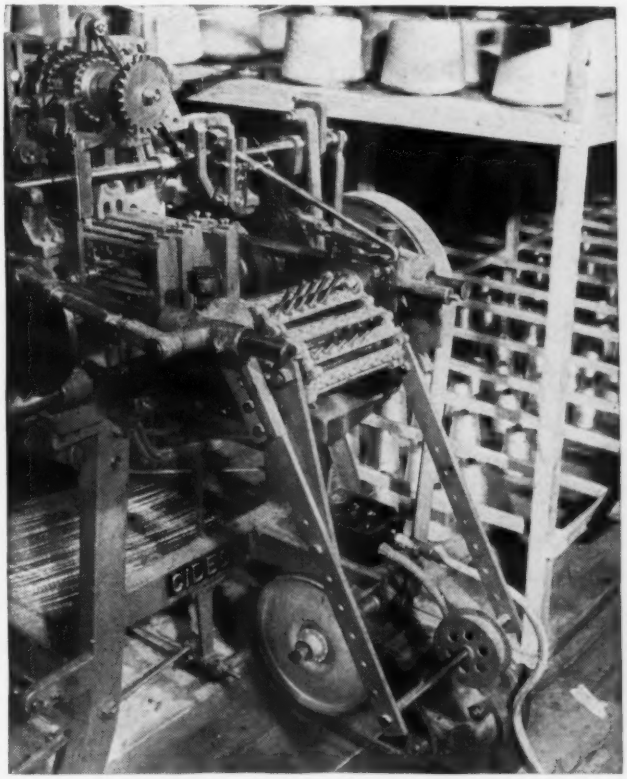

Fig. 2. The chain barrel of the Cidega controls the lateral movement of the "weft" bars by the position and height of the pins shown in the photograph. The pins are moved into position by the pawl-and-ratchet combination shown on the right. Note the end mountings of the "weft" bars, which are disassembled when the fixer changes the number or positions of the tube holders (shown in Fig. 1.) in order to change patterns.

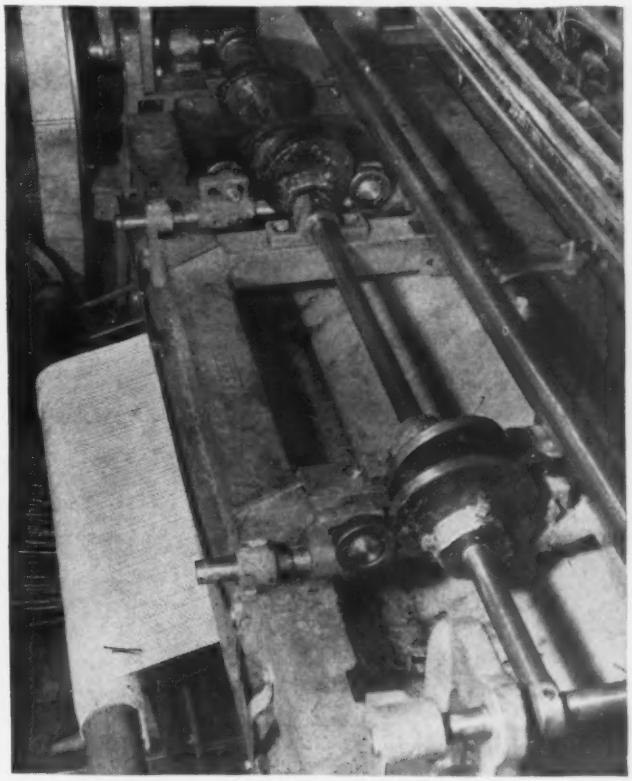

Fig. 3. The needle-bar motion of the Cidega is obtained through the movement of the cams shown in the center of the photograph. They driven by the main shaft of the machine. (Belt of main shaft is shown in upper, left-hand corner.) The needle-finger arm is also moved by the action of these cams, but is spring actuated on its return movement. The cloth roll is located at the rear of the machine between the creels and the machine.

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Cationic SOFTENERS Give Permanent Finish

Softness and pliability in textiles can be controlled. The fabrics worn by the two models are identical and received exactly the same treatment except that the one on the right has been finished with one of the new cation-active softeners. A number of products already on the market, such as underwear and pajamas, have had applied to them this type softening agent, which is effective on wool, rayon, or cotton.

HIGHLIGHTS: *Cation-active softeners impart durable softness to fibers and fabrics—Find extensive use on synthetics and with resin finishes—Tests developed to evaluate finish applied.*

By C. NORRIS RABOLD, *Consulting Editor, TEXTILE WORLD*

ONE OF THE most useful groups of present-day softeners are the cationic types. As they react with all negatively charged fibers or fabrics because of their own positive charge, a firm bond is established between the softener and fiber. Thus is obtained a durable softness of hand, which remains much the same through repeated laundryings and dry cleanings.

These products are synthetic in nature, and resulted from the research of many laboratories. Most of the cationic auxiliaries owe their activity to the presence of a quarternary nitrogen radical. This acts as the hydrophile for the conveyance of the long-chain hydrophobe. The nitrogen may be present either as a complex ammonium radical, or as a member of a heterocyclic ring.

According to Dr. Hugh H. Mosher [T. W., Aug., 1944], "One very interesting use of the cationic surface-active agents has been in the field of textile finishing. Most finishing sizes, like the textiles, are anionic. As a consequence, but little size is absorbed by a fabric during finishing, unless a high concentration of finish is present in the processing bath."

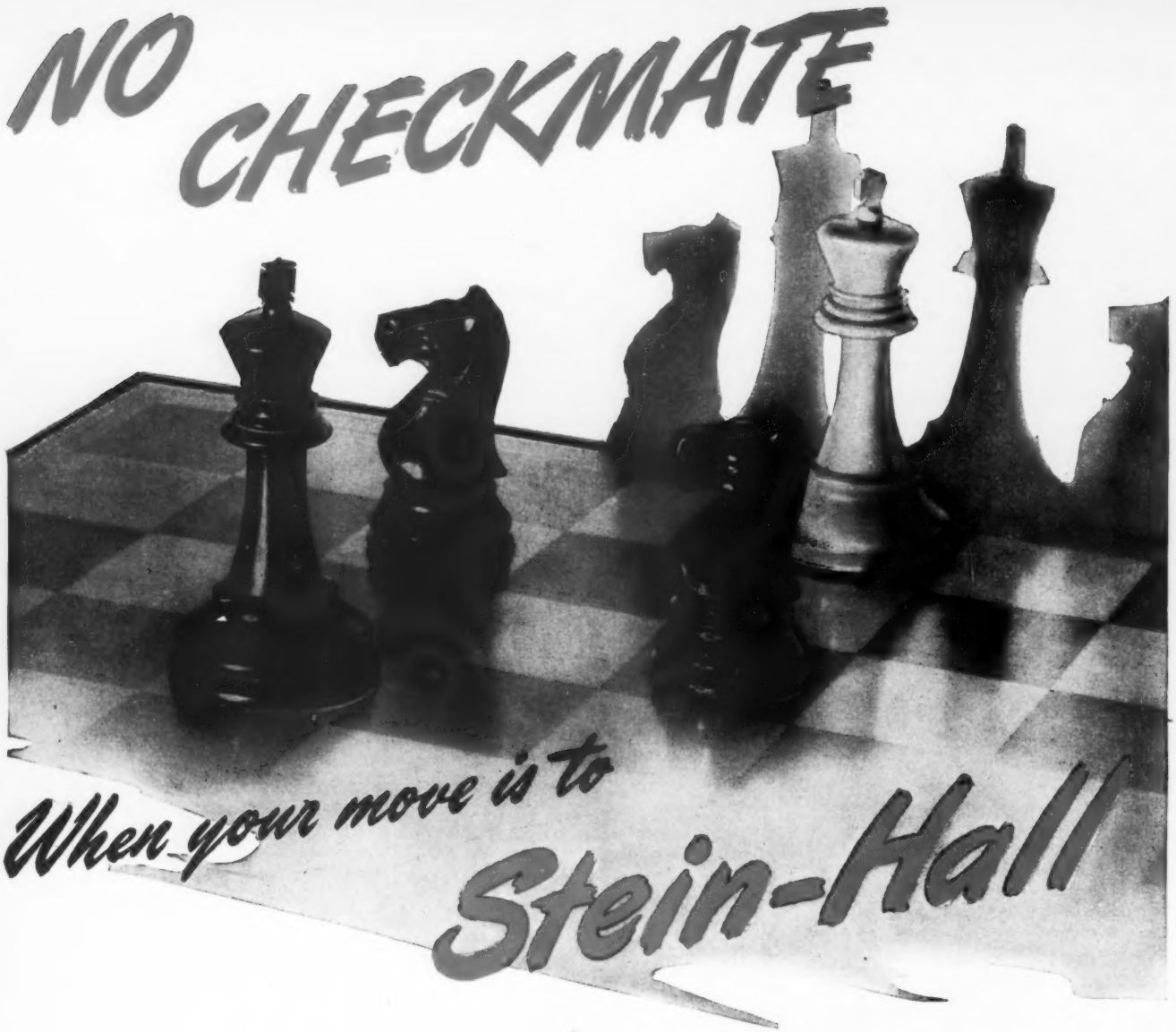
IMPROVEMENTS MADE. Some of the earlier cationic products possessed certain drawbacks. They were difficult to get in solution and would cause spots and stains if this task was not properly carried out. They often proved to be more expensive than conventional oil and wax finishes, which more than offset such advantages as freedom from odor and color as well as durability of finish. Then too, they usually gave an undesirable water-resistant finish, especially on fabrics to be Sanforized. As they were not compatible with anionic wetting agents, this rather limited their use on certain lines of finishes.

However, present-day cation softeners show much improvement in their properties. Their money value is good, they go into solution readily without lumps or specks of undissolved softener, and at the same time, maintain their other desirable properties.

FIBER AFFINITY. Cation-active softeners are those which possess a positive charge of electricity in aqueous media, and it is this electrical charge which gives the softener and the negatively charged fibers their affinity for each other. This makes for a durable rather than a purely temporary finish, such as is obtained with oil and wax softeners. These latter types are usually

A modern cationic softener mixed with warm water is added to a resin impregnation bath in a padder. The usual concentration of such a softener is 1%. One particular type (Aerotex Softener H) is said to mix freely with almost every type of chemical finish and to be free from injurious reactions of any kind.

NO CHECKMATE



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Philadelphia 3, Pa.....1600 Arch Street
Portland 4, Ore.....717 Lewis Building
Providence 1, R. I.....200 Grosvenor Bldg.
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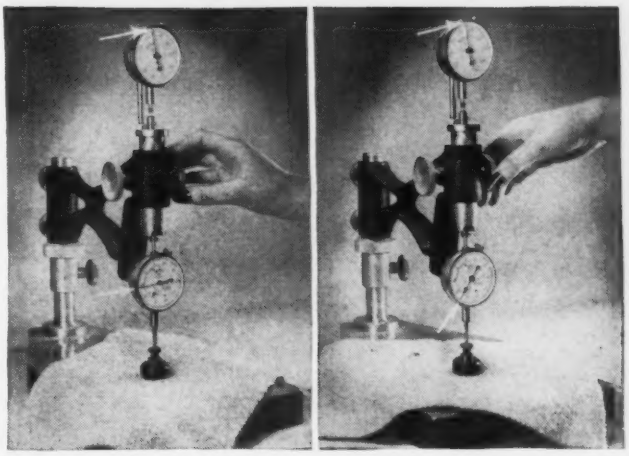
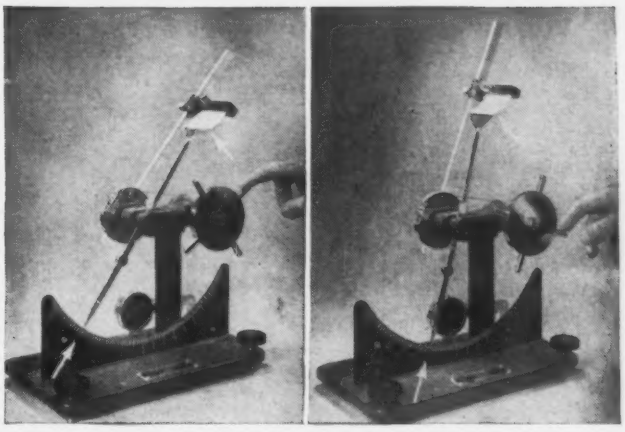


Softness of fabric is measured by the "Compressometer." The blanket material on the right was treated with a cation softener, and the identical blanket material on the left was not. A uniform pressure was exerted on the two pieces of fabric. (Note similar reading of pressure gages at top.) The comparative softness of these two pieces of fabric under this similar pressure is registered on the two lower dials. The resitance (stiffness) of the untreated fabric on the left is 88, while resistance of the fabric on the right is only 75, or 13 points lower.



The Gurley stiffness tester is used to measure comparative stiffness of fabrics. The piece of fabric at the top is moved by the control wheel so that it presses against the upper end of the pointer. The stiffer the fabric is, the further it moves the pointer before it slips past. In these two photographs, the two pieces of fabric are identical except that the one on the right was treated with a cation-type softener. At 2.8, just beyond the reading shown on the dial, this much softer, treated fabric slipped past the pointer. The untreated fabric on the left, which is much stiffer, moved the pointer to 6 before it slipped by.

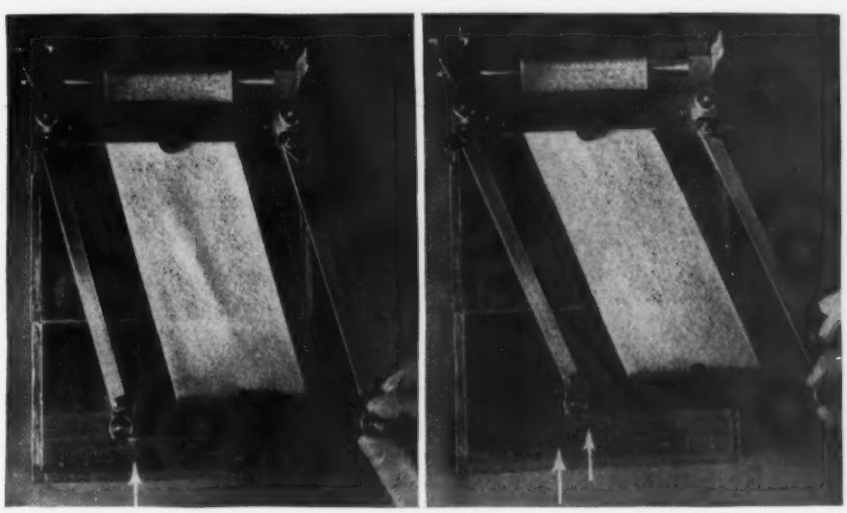
anionic or negatively charged in themselves, and, therefore, their deposition on negatively charged fibers is purely mechanical. They can easily be removed in ordinary laundrying and dry cleaning operations. The cations fulfill all the functions of an efficient softener, for they act as a lubricating film, penetrate and cover each individual fiber, smooth out all their irregularities and rough surfaces which tend to have adhesive or binding qualities, separate the fibers, make them more pliable, and eliminate unwanted friction.

The action of the modern cation-active types may be likened somewhat to what happens when a handful of uncooked spaghetti is held over the spout of a steaming teakettle. The spaghetti becomes soft and pliable, partly because the steam makes the spaghetti smooth and slippery on the outside and partly because of internal relaxation of each stick.

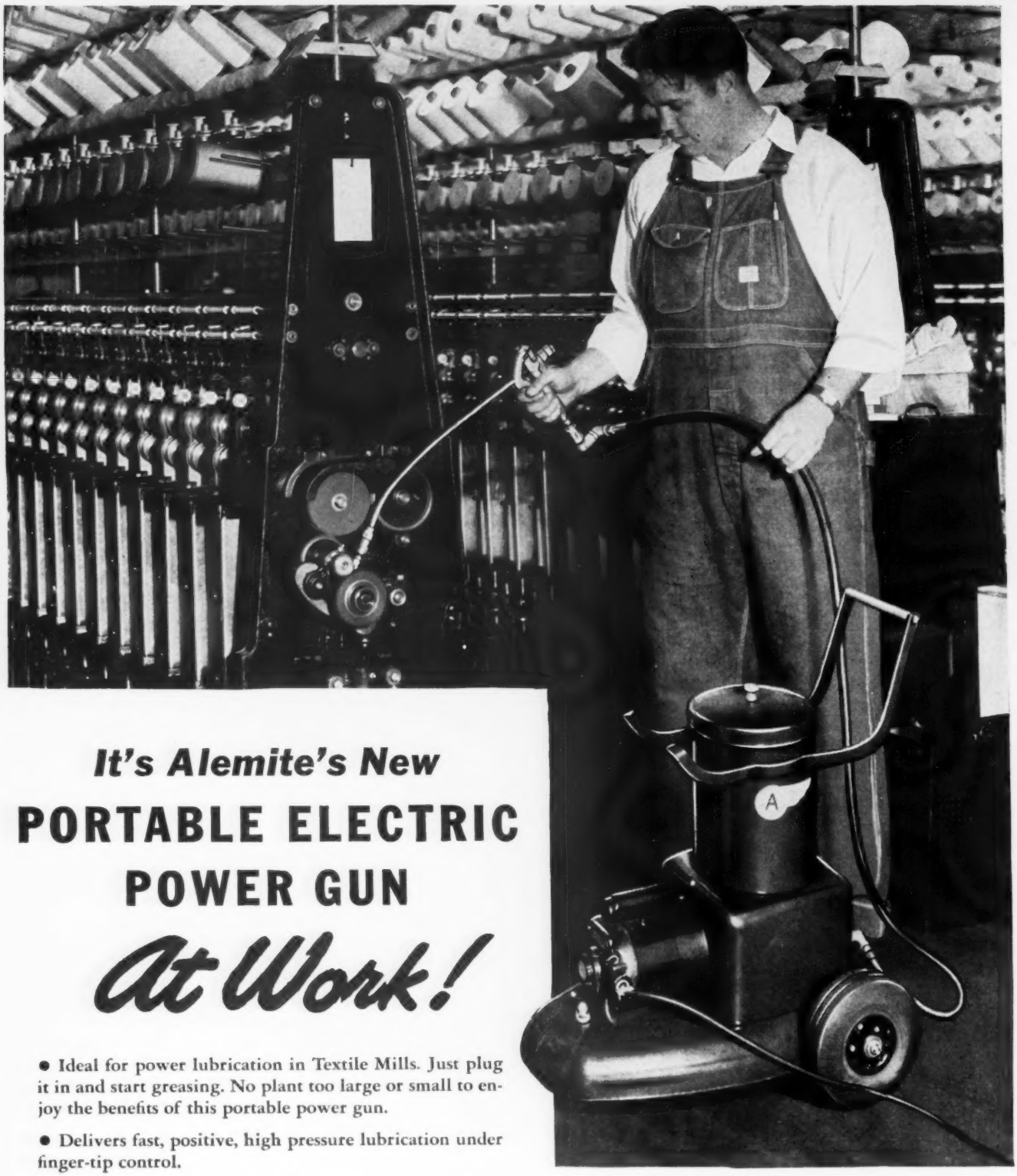
The earlier types were mostly acidic in composition and could only be used in solutions below pH of 7, but there now are certain ones composed of chemicals in the colloidal state and blended on the alkaline side. These are especially designed to insure ease of dispersion in warm water by ordinary stirring. Some of these alkaline softeners are said to be excellent wetting agents and when used may render the employment of other wetting agents in the formula unnecessary.

SYNTHETIC FIBERS. Cation-active softeners seem to be especially effective on synthetic fibers to which they impart marked softness. It has always been a problem to finish many synthetic fabrics with the oil-type softeners, since it was necessary to use them in rather high concentrations, ranging from 1% to 5%, in order to obtain the desired hand. These oil softeners had a tendency to deposit on the surface of the fiber and would cause objectionable marking, due to their lack of affinity. The cation actives, on the other hand, are seldom used in concentrations above ½ of 1%, except with resins—most usually much less. Because of their affinity and power of penetration, as well as their low concentration, they do not deposit objectionable surface films.

It is probably safe to say that many of the new resin finishes would not be used so extensively as they are if it were not for the cation-active softeners. Many resins having other desirable qualities impart objectionable stiffness and harshness of hand. Addition of these synthetic softeners in many resin impregnations is a simple way of obtaining full control over the degree of softness in the finished fabric.



Comparative pliability of fabrics is tested on the "Planoflex." The frame is moved slowly to the right until a wrinkle appears in the fabric thus indicating the limit of its pliability. In this case, the untreated fabric on the left reached the limit of its pliability and developed a wrinkle at a reading of 15. The fabric on the right, identical except that it has been treated with a modern cation softener, registers a pliability of 22 before the first indication of wrinkling occurred. *All photos courtesy Textile Resin Dept., American Cyanamid Co.*



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Attention to Details Can IMPROVE WEAVING

HIGHLIGHTS: *Loom inspection and fixing are important factors of weaveroom practice, say Georgia mill men—Extra bracing on looms makes possible a speed increase of approximately 15%, with an efficiency loss of about 3%—Loomfixers can reduce the number of broken quills at transfer.*

WEAVING PRACTICES followed in a large number of Georgia mills were discussed at the fall meeting of the Textile Operating Executives of Georgia, held recently in Atlanta, Ga. Eighteen mills, representing 916,166 spindles and 20,225 looms, sent in written answers to eight questions on slashing [T. W., Dec., 1946, p. 133] and eight questions on weaving previous to the meeting; and the questions were discussed from the floor by approximately 300 members and associate members attending the meeting.

The written answers and parts of the oral discussion relating to weaving practices are condensed here.

Question No. 9. *What is the best method of checking looms for general upkeep?*

The major point of difference between the methods of checking looms used by the various mills, as pointed out from the floor by G. H. Smith, assistant manager, Pepperell Mfg. Co., Lindale, Ga., who led the weaving discussion, lay in whether responsibility was placed primarily upon the loomfixer or the second hand. Of the 17 mills that sent in written answers to this question, nine emphasize the role of the loomfixer and eight that of the second hand.

Mill No. 2 wrote: "We tried having the second hands make weekly inspections and list all worn parts. These lists of defects were divided equally between shifts, and each fixer was given a list of jobs to fix on his section. We discontinued this system for two reasons: First, too many parts

(Continued on page 202)

Loom Inspection (by Fixer)

Once per week
- Shuttles
  - Grooves (If necessary, enlarge grooves with sandpaper and apply tallow.)
  - Springs and eyes (See that they are properly placed and lined.)
  - Spring and eye bolts (Make sure they will not cut reed.)
  - Bristles or fur
- Pickers and picker sticks
- Box fronts and binders

As needed
- Let-off motion
- Filling stop motion
- Crankarm
- Swords
- Rocker shaft
- Protecting rods
- Temple knives
- Thread holders

Fig. 1. This schedule for loom inspection, given by Mill No. 3, is based upon equally dividing the looms on each section between all the fixers on that section, whether the looms are running two or three shifts. "Two things must be stressed," the mill wrote. "First, each fixer must fix each loom when it is flagged, regardless of whether or not it is his loom; and second, this system must be carried out on all shifts and by all fixers to prevent dissatisfaction."

Comparison of Braced and Unbraced Looms

40-in. X-Model Looms	Braced	Unbraced
No. looms tested	10	10
No. weeks tested	29	29
Speed of looms (p.p.m)	202	180
Speed increase (%)	12.22	.....
Operating efficiency (%)	86.26	90.67
Actual production rate (p.p.m.)	174	163
Repair cost per loom per wk. ($)	0.88	0.739
Repair cost increase (%)	19.08	.....
No. shuttles (chief cost item) used in 6 mo.	50	23
60-in. E-Model Looms		
No. looms tested	23	23
No. weeks tested	16	16
Speed of looms (p.p.m.)	149	125
Speed increase (%)	19.20	.....
Operating efficiency (%)	87.87	93.81
Actual production rate (p.p.m.)	131	117
Repair cost per loom per wk. ($)	0.489	0.296
Repair cost increase (%)	65.07	.....
No. shuttles used in 6 mo.	45	12

Fig. 2. Results of tests made at Columbus Mfg. Co., Columbus, Ga., indicate that loom bracers can be used to advantage either for speeding up looms or decreasing mechanical breaks . Although the E-Model Draper loom shows better results than the X-Model, the bracers make increased pickage practicable on both models and on relatively any plain-woven fabric.

SHELL TEXTILE LUBRICANTS

NON-GUMMING
COMPLETE WASHABILITY
RUST-PREVENTIVE
NON-SPLATTER
NO SOAP COMPOUNDS
NORMAL APPLICATION

Suitable grades for Spinning, Knitting, Weaving, Braiding and Finishing Equipment

THE SHELL LUBRICATION ENGINEER will give you sound advice about any textile machine lubrication. For further information, write Shell Oil Company, Incorporated, 50 West 50th Street, New York 20, N. Y.; or 100 Bush St., San Francisco 6, California.

SHELL TEXTILE LUBRICANTS

SHELL

TEXTILE Equipment NEWS

New Woolen Card Has 96-in. Cylinder

A new single-cylinder woolen card has been announced by the New England Machine Works, 574 E. Main St., Waterbury, Conn. Of welded-steel and aluminum construction the machine is 72 in. wide and has a 96-in. main cylinder. The main-cylinder rotation is downward from the feed; and, in operation, the lower portion of the machine, consisting of six sets of workers and strippers, a fancy, and a doffer, is considered to be the breaker section.

Sliver is taken off the cylinder at the far side and is carried up and doubled onto an apron and fed back to the cylinder through intermediate feed rolls and a lickerin. The upper portion of the cylinder acts as a finisher section, being fitted with 11 sets of workers and strippers, a fancy, and a doffer. The carded stock is removed and conveyed to a tape condenser. Workers are 7 in. in diameter; strippers are 2¼ in.

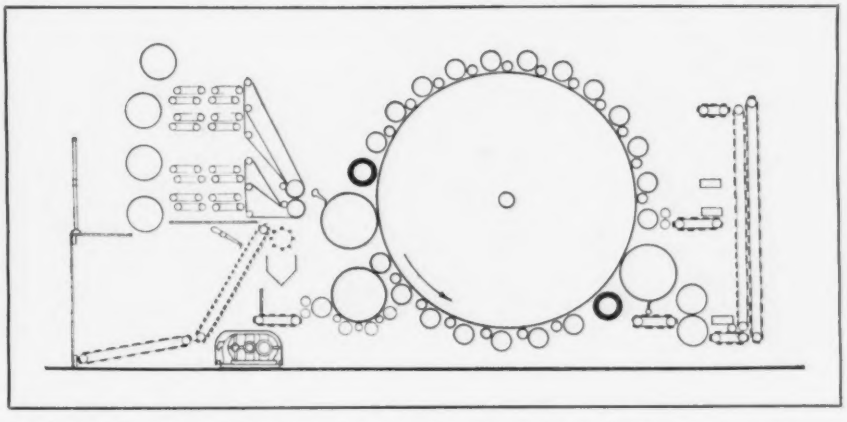
All bearings are of anti-friction type, completely inclosed, and are lubricated through grease fittings. The machine is driven through a hydraulic coupling. The cylinder, all workers and strippers, both fancies, and both doffers are chain driven.

Due to the fact that both feed and delivery are at the same end of the machine, a very low Bramwell feed is used and the tape condenser is mounted above it. The projection of the feed beyond the condenser is designed to enable the fitting of an automatic-feed device, should one be desired. To simplify stripping, a portable stripper is being built and is expected to be capable of handling 15 sets of cards.

Reduced fly is reputedly obtained, even at higher surface speeds, due to the large diameter of the cylinder and the reduced speed of the strippers. Better carding also, is reported to result from the large cylinder size because the path described by the cylinder in moving past a worker is closer to a straight line, giving a less abrupt separation of stock and less fiber damage.

The overall length of the new card is 21 ft.; the total weight is less than 20,000 lb.

The first machine to be produced by the company is now in operation at Princeton Knitting Mills, Inc., Waterbury, Conn. It differs slightly from the present design.

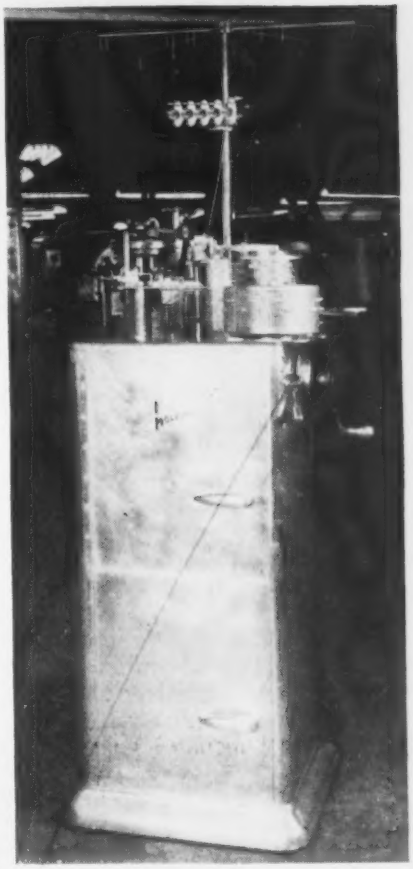


Single-cylinder woolen card utilizes lower portion of cylinder as breaker section and upper part as finisher. The machine is 21 ft. long, of welded-steel and aluminum construction, and is equipped with closed-type anti-friction bearings. (New England)

Seamless-Hosiery Machine Has Wide Pattern Range

A new seamless-hosiery knitting machine, called "Holdstitch," has been announced by American Textile Machine Corp., Murfreesboro, Tenn.

Made in cylinder sizes of 3, 3¼, 3½, and 3¾ in., the machine is reported to have an operating speed of 200 rpm. The machine is equipped with 12-step pattern control, 48-move pattern drum, and 24-move striper drum; and it is claimed that these working in combination with variations in yarns, colors, wales, and needle action provide means for almost limitless range of patterns and effects.



Holdstitch seamless-hosiery machine, available in cylinder sizes of 3, 3¼, 3½, 3¾ in., operates at 200 rpm. (American Textile)

The machine derives its name from the method of needle control, said to be a new principle in knitting. The Holdstitch principle permits feeding of yarn to selected needles for a desired number of courses, holding of the yarn on the selected needles while normal knitting takes place on the remainder of the needles, and then resumption of knitting on all needles. In this way, wales are shortened and pulled out of alignment in such a way

as to produce tucks, mock wraps, and other effects.

The machine mechanism is inclosed in an aluminum cabinet of modern appearance designed to protect moving parts, protect workers, and prevent lubricants from reaching yarns or fabric. Moving parts have been kept to a minimum; principal shafts turn in oilite bearings; and cam screws are provided for effecting pattern changes, which reputedly reduce greatly the time and the cost of changing patterns.

Exclusive sales agent for the new machine is Thos. B. Walker, 202 Public Square, Nashville, Tenn.

Cloth-Room Machines Handle Large Rolls

Two new cloth-room machines, an inspection frame and a tubing machine, have been announced by Progressive Machine & Tool Co., 198 East 25th St., Paterson 4, N. J. Both machines are of heavy-duty steel construction designed to handle large-diameter rolls of cloth; both have individual-motor, V-belt drives; and on both, all linkage and operating-part castings are of bronze and guide rolls are made from chrome-plated steel tubing.

The inspection frame will accommodate 36-in. diameter rolls on both front and back. It has a simple and effective drive which is designed to permit forward and reverse operation at any desired speed within a wide range. A single control lever is conveniently located. All gears, pulleys, and shafts are mounted on anti-friction bearings. The large-size measuring roll is covered with friction-type material. The tension device for the let-off shaft is adjustable from the front of the machine. A slot is provided in the center of the inspection table for insertion of a measuring stick. Special attachments can be supplied, if desired.

The tubing machine will handle rolls up to 28 in. in diameter in standard models and up to 36 in. if specified by purchaser. Drive is accomplished by V-belt through a Twin-Disc dry clutch operated by the starting lever, and the V-belt pulley runs on anti-friction bearings when idling. The let-off and measuring roll assembly is mounted on a movable carriage which rides on anti-friction bearings; a hand wheel at the front of the machine controls the position of the carriage by means of a rack and pinion and is designed to make more easy the elimination of telescoped rolls. The brake on the let-off is controlled by the starting lever. The one-yard measuring roll is covered with friction-type material.

The drive end of the tube chuck is fitted with a spring-loaded device to compensate for small differences in tube lengths; the movable end of the chuck is retractable, by means of a lever, for ease in loading and unloading. A tubing bar hinged on a universal joint is available for use where tube chucks do not meet customers' requirements.

Both machines are equipped with yardage counters, center-bar quill inserts, and center-bar lock-in devices.

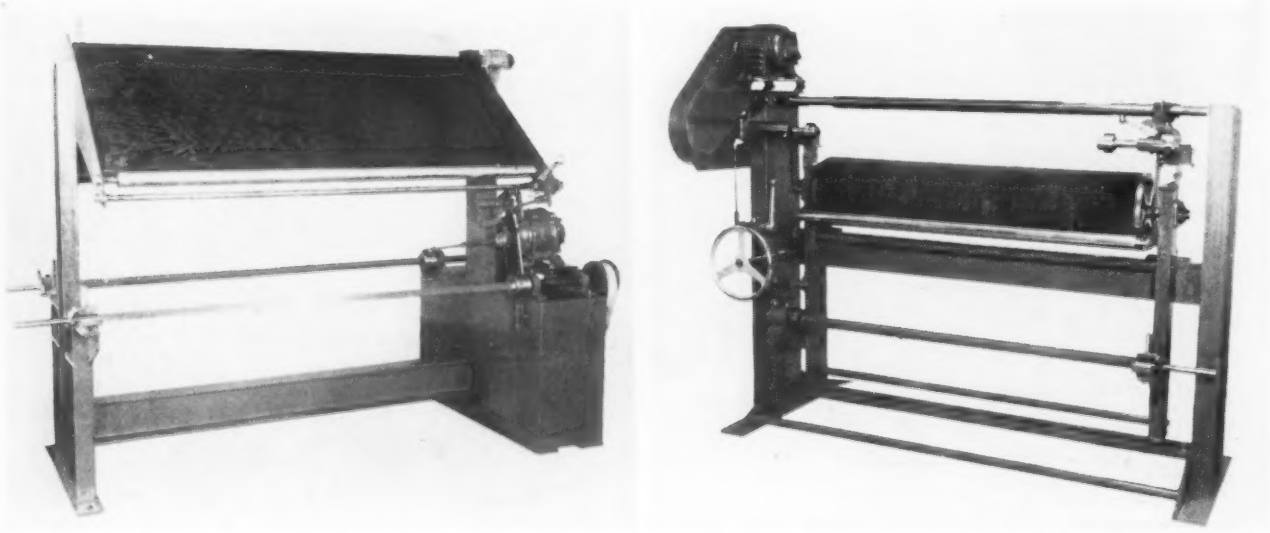
Electric Heating Pad Dries Printed Fabrics

A giant electric heating pad built to serve as an ink-drying medium in screen printing, has been announced by Goodyear Tire & Rubber Co., Akron, Ohio. Weighing 187 lb. and measuring 30 ft. by 65 in., the pad was developed to function as a tabletop drying element, so that multiple colors may be printed in one continuous operation.

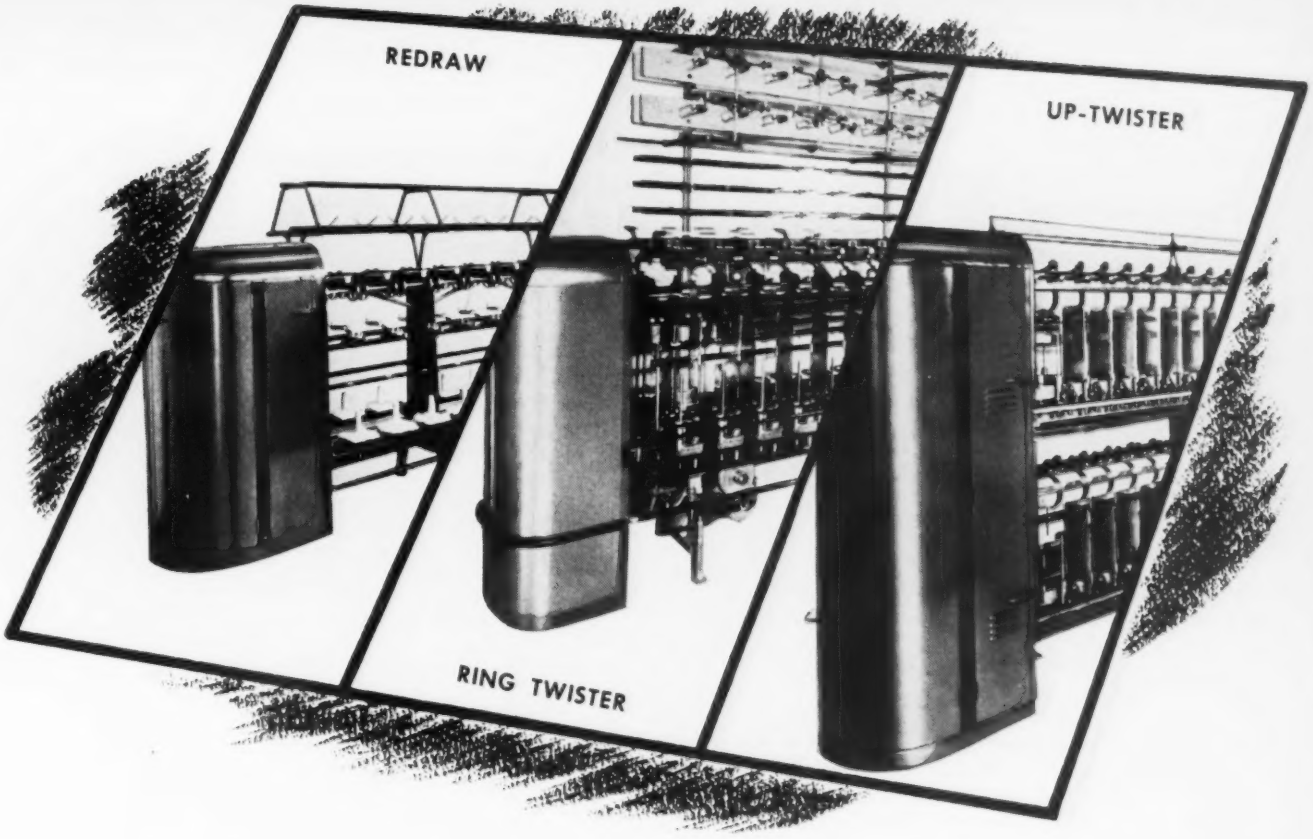
Waterproof and highly flexible, the pad is fashioned sandwich style of specially compounded electricity-conducting rubber between non-conductive sheets. Heat output is 8 kw., controlled by a thermostat and accomplished without the use of resistant wires or metallic elements. The manufacturer states that similar pads can be made in all shapes and sizes.

Static Eliminator Is Self-Contained

A new type static eliminator known as Ionotron has been announced by U. S. Radium Corp., 535 Pearl St., New York 7. The device, which is self-contained, consists of a shielded bar carrying a radio-active-alloy strip; the bar is placed in position on a ma-



New inspecting frame (left) and new tubing machine (right) are of heavy all-steel construction, designed to handle large-diameter rolls of cloth. (Progressive)



3 answers to your twisting and redrawing problems

Whether you need ring twisters, up-twisters or redraws, Atwood will give you the unit that provides maximum production of higher quality yarn at lowest overall cost. Each Atwood machine has basic design features that insure highest efficiency. Here's a brief summary of some of these features.

ATWOOD RING TWISTERS

For doubling and twisting all types of yarns.

1. Single, endless-belt drive assures constant spindle speeds throughout the entire machine.

2. An automatic stop motion eliminates yarn with a ply missing; eliminates roller laps and reduces dirty yarn and waste to a minimum.

ATWOOD UP-TWISTERS

For bobbin or headless package up-twisting of silk or synthetic yarns.

1. High spindle speeds, from 6,500 to 10,500 RPM, depending upon the turns of twist per inch, and type, size and weight of package.

2. A bobbin hanger, in place of the conventional finger, results in better-built packages, and more accurately controlled thread lay, assuring less burnt yarn, less hard twist, fewer broken filaments, and more uniform conditioning.

ATWOOD REDRAWS

For redrawing from cakes, cones, tubes, pirns, bobbins, or skeins.

1. Variable speed main drive permits changing rate of production in a matter of seconds from 150 to 350 yards per minute simply by turning a small handwheel.

2. A quick-reading, yarn-speed-per-minute chart mounted on the machine makes all necessary calculations for you automatically.

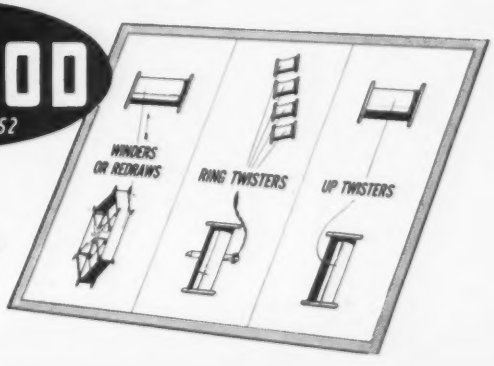
These are just a few of the design features of each of these machines. Complete information will be sent promptly, on request.

AD-11

ATWOOD DIVISION
FARREL-BIRMINGHAM COMPANY, INC.
STONINGTON, CONNECTICUT, U.S.A.

ATWOOD
SINCE 1852

What's new in yarn machinery!



Installation of self-contained, radio-active static eliminator at Triangle Finishing Corp. is reported to have reduced cloth swing stoppages by 20%. (U. S. Radium)

chine at the point where static charges tend to build up. The radio-active material ionizes the air by means of alpha rays; the ionized air acts as a conductor to remove static charges as they are generated. The active source of alpha rays is reported to be shielded so that emanations are highly directional. The action is said to be permanent for all practical purposes since the radio-active source will lose only 50% of its generating power in 1,600 yr. The device is a result of the work done in development of the atomic bomb.

An installation of the new static eliminator on cloth swings at Triangle Finishing Corp., Johnstown, N. Y., is reported to have reduced stoppages of these machines by 20%

New Soaking Machine Handles Skeins or Cakes

A new machine for soaking rayon skeins and cakes has been introduced by Johnson Engineering & Manufacturing Co., 173 Gilligan St., Wilkes-Barre, Pa. The machine is a refinement of the company's skein-soaking machine. The adaptation which allows soaking of cakes consists of new arms of smaller size designed to fit inside rayon cakes.

When sizing skeins, the yarn is merely pushed over the front flanges and placed on the arms which revolve and have both inner and outer sprays. To size cakes, the front flanges of the arms are removed as shown on the right-hand side of the illustration, the cakes are placed over the small-diameter arms, and the soaking solution is sprayed from both inside and outside. The manufacturer recommends that when soaking cakes, the arms remain stationary except for one-half a revolution at mid point in the process.

The machine is available in both 3-arm and 6-arm models. The tank is made of monel-clad material and has a steam jacket on the bottom and separate controls for each-side of the machine.

Pull-Skein Winder Doffs Automatically

A new automatic embroidery-skein winding machine, manufactured by William Ayrton & Co., Ltd., Manchester 12, England, and announced for distribution in the United States by Atkinson, Haserick & Co., 211 Congress St., Boston, reportedly winds skeins, ties and cuts the yarn automatically, and requires the operator only to apply label bands. From one to 30 yd. of yarn can be wound in skeins which have collapsed length of 3 to 9 in. Production of the machine is reputed to average 700 one-band, or 400 two-band skeins per hour.

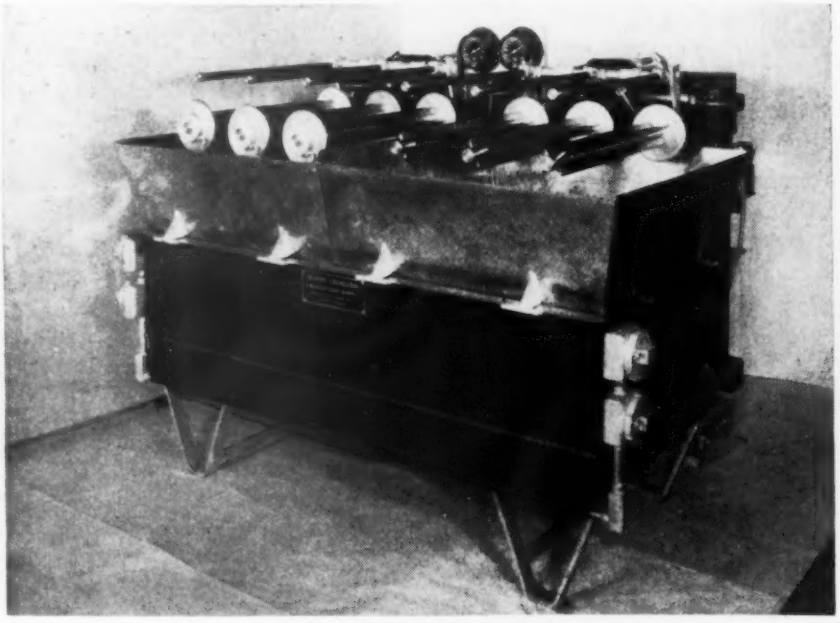
Skeins are wound on the parallel-wrap principle, with the flyer running continuously. Automatic doffing is reported to be a production-increasing feature.

Sample dryer for determining moisture content is designed to dry samples of 400-gram weight containing as much as 60% moisture in a matter of minutes. (Baird)

Fiber Sample Dryer Uses Forced Draft

A new fiber dryer for moisture determinations has been announced by Baird Associates, University Rd., Cambridge 38, Mass. Unlike conventional oven-type dryers, the new dryer forces heated, filtered air through the sample under test. Moisture is said to be removed in a matter of minutes, even when the sample contains 60% moisture and is as large as 400 grams.

(*Continued on page 223*)

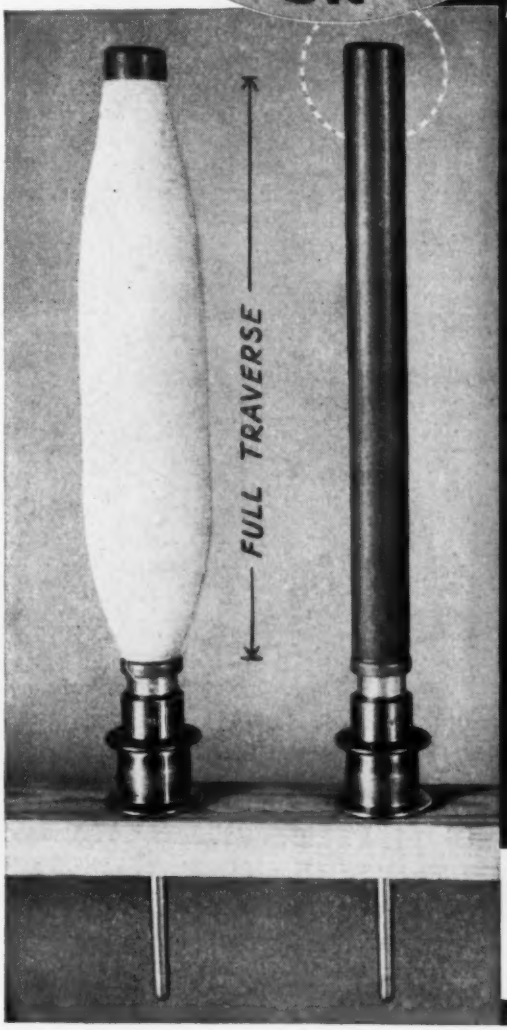


Soaking machine for rayon skeins and cakes is available in either 3-arm or 6-arm model. (Johnson)

New

SONOCO STRAIGHT SIDE WARP SPINNING BOBBIN

Another SONOCO First—our latest development in a warp spinning bobbin that drives from the top at high speeds without vibration . . . A "straight side" bobbin that permits use of full traverse.



The above illustration details the "steep-taper" of the "cushion-grip," an integral part of the SONOCO Bobbin which fits the spindle with slight squeeze to form the "top drive" contact. This contact breaks sharp and easy with no drag or pull in doffing.

Better results is the Pay-off

Mill run tests have shown fewer ends down at higher speeds because of uniform seating and level running. No corrugations make it easy to strip.

Inquiries regarding further details and results of mill tests are invited.

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DYES & CHEMICALS — PRODUCTS & PROCESSES

Protonized Process Shrinkproofs Woolens

"Protonized," a new woolen-shrinkproofing process said to enhance fabric wearability, has been announced by Alrose Chemical Co., Providence, R. I.

The process is reported to leave wool with a soft and lofty hand, to increase the abrasion resistance of woolen fabrics, to eliminate all danger of felting, and to make wool whiter so that further bleaching often becomes unnecessary. Tensile strength of wool is not affected, it is reported, and dyeing properties are also improved.

The process is described as based on the use of a chlorinating agent which liberates the chlorine slowly, giving uniform results and level dyeings. The degree of chlorination can be controlled to give the desired amount of shrinkproofing and feltproofing. The entire treatment is carried out in 30 to 40 min. at temperatures of 100° to 110° F.; no special equipment is needed. It is equally applicable to wool stock, yarn, and finished woolens of woven or knitted fabrics and can be used on rayon and cotton in wool mixtures without harming them, it is reported.

Wool which is Protonized processed reputedly shows no increase in alkali solubility as compared with untreated wool, and the scale is not destroyed.

Cationic-Active Softeners Resist Washing, Cleaning

SOFTOL AC, AD, XAC, XAD; Textile Chemical Div., Dexter Chemical Corp., 819 Edgewater Rd., New York 59.

Four products suitable for softening cottons and rayons have been announced by Textile Chemical Div. of Dexter Chemical Corp., New York. It is claimed that these products, Softol AC, AD, XAC, and XAD, are especially satisfactory for softening cotton and rayon fabrics which have been finished with cellulose products.

All four Softols are reported to be soluble in water, unaffected by hard water, and to exhaust onto the fabric readily. Softols are said to be compatible with starch, dextrine, gums, and many other finishing agents but, being cationic, should not be used with soaps, sulfated oils, or any anionic-active agent.

Softols are soluble in neutral, acid, or alkaline solutions; but sulfates tend to affect their solubility. Softols are adjusted to have a minimum effect on the shade of direct colors and to have a preventative effect on the gas-fading of acetate colors.

New Line of Tints Include Nylon Colors

CERTIFIED TINTS; United States Testing Co., Inc., 1415 Park Ave., Hoboken, N. J.

A new line of Certified Tints composed of 51 different water-soluble col-

(Continued on page 226)

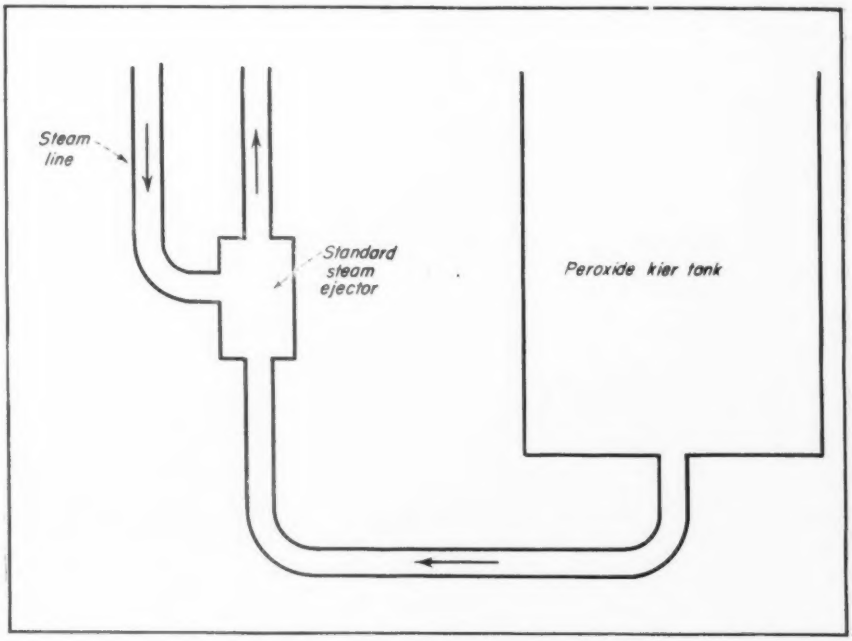
Mill Maintenance

Standard Steam Ejector Reduces Bleaching Costs

Installation of a standard steam ejector to circulate peroxide solution in the kier process of bleaching has eliminated the electrically driven motor pumps, steam pumps, and steam coils formerly used at Dundee Mills, Griffin, Ga. Maintenance costs, which had become considerable on the old equipment, is practically zero on the new set-up.

Live steam is fed into the ejector to heat the bleaching solution and the material in the kier. As the steam passes through the ejector, it carries with it the bleaching solution, thus causing circulation.

An ejector was tried experimentally on one kier at Dundee Mills, and the results were so satisfactory that pumps, motors, and coils were removed and ejectors installed on all the other kiers in the bleachery. Excellent results from the complete installation are reported.



Maintenance costs have been materially reduced at Dundee Mills, Griffin, Ga., by installing standard steam ejectors on the peroxide kiers. The ejectors eliminate the motors, pumps, and heating coils formerly used to heat and circulate the peroxide-bleach solution.

The way to a woman's heart is through her EYES!

Styled with pleasing, personable qualities, the eye-catching, head-turning characteristics of products knit with Dixie Durene go straight to the heart of the fair sex.

Have you ever observed how many department store ready-to-wear buyers are WOMEN? Make no mistake about it . . . the woman buyer is discriminating, whether she's buying for a store or for her family. In her examination of knitted fabrics, she knows real quality when she sees it.

Articles made of dependable Dixie Durene are soft, lustrous, absorbent—quality features with eye-appeal that sell merchandise, and keep sales repeating!

Dixie Durene

A PRODUCT OF CONTROLLED MANUFACTURE

Made of Durene® multi-ply mercerized combed cotton yarn

4 WAYS BETTER than ordinary cotton yarns

EXTRA COMFORT —more absorbent

EXTRA STRENGTH —longer wear

EXTRA QUALITY —lasting lustre

EXTRA SERVICE —easy to wash

® Reg. U.S. Pat. Off.

DIXIE MERCERIZING CO. CONTROLLED MANUFACTURE CHATTANOOGA, TENN.

Dixie MERCERIZING COMPANY

CHATTANOOGA 1, TENNESSEE

Kinks AND SHORT-CUTS

★ **SAVINGS BOND PRIZE FOR FEBRUARY**
(December Contest)

A $25 SAVINGS BOND FOR YOUR IDEA

A $25 Savings Bond will be awarded each month for the most useful "kink" published in this department. This contest is open to all readers of TEXTILE WORLD, and there is no limit to the number of entries any one person may make.

Contributions must be received not later than the last day of the month to be eligible for the award for the second succeeding month. Items may pertain to production methods, mill engineering, safety, cutting costs, improving quality, speeding up production, in brief any little device, stunt, kink, or short-cut which you have tried out in your own mill which you believe will be helpful to other mill men. Items should contain sufficient detail to permit other mill men to utilize the ideas in their own operation. Previously published material is not eligible for the award. Judges of the contest are the editors of TEXTILE WORLD.

TEXTILE WORLD shall have the right to publish any items submitted. Items which are accepted will be paid for at our regular rate for this type of matter with extra payment for appropriate sketches or photographs. The sketch you submit need not be a finished drawing.

In writing to this department, give your real name and address as evidence of good faith and to permit payment for items accepted. Please advise whether your name may be used with the kink.

Contributions should be addressed to: Technical Editor, TEXTILE WORLD, 330 West 42nd St., New York 18, N. Y.

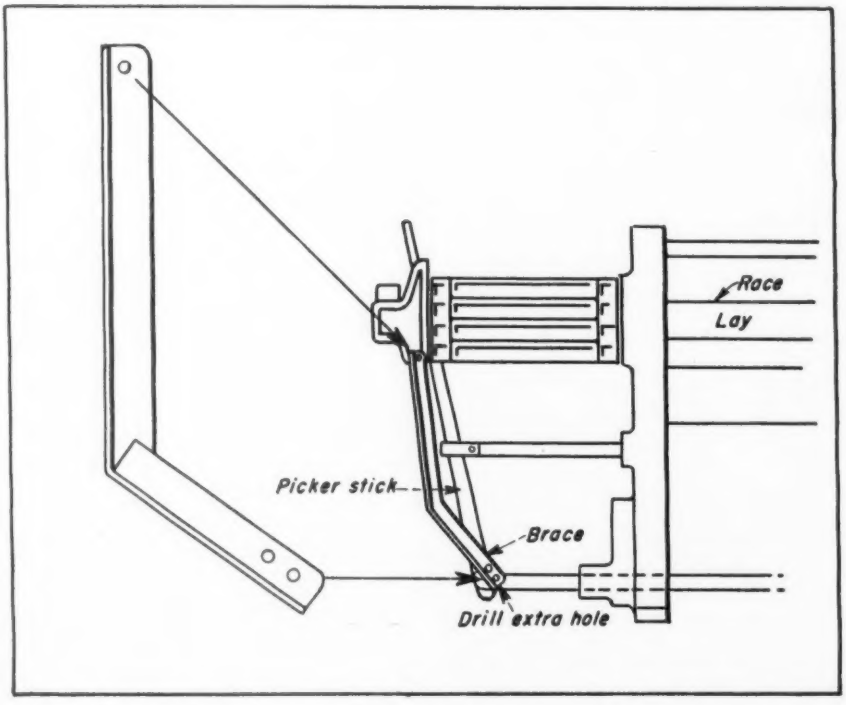
Broken Lay Ends Prevented by Brace

Some time ago we bought a number of used 4x1 automatic looms; and while installing them, we found that the lay ends of several of them had been welded. When we started the looms up, we soon discovered the reason for these welded places. We were running the looms on four-shuttle work; and in spite of the braces that run lengthwise in front of the box ends, breaks began to occur on the bottom run of the picker-rod guide of the lay-sword end directly behind the boxes.

We reasoned that this breakage was caused by vibration, whip in the lay as it moves back and forth, and possibly a picker jamming now and then. We reinforced the lay-sword ends, as shown in the accompanying sketch, and found that this reinforcement maintains the looms in operation.

A 34-in. length of 1¼-in. angle iron is used for the brace. Measure off 12¾ in. on the angle iron and bend the iron at this point so that the short end will reach the picker-stick stud on the rocker iron and the long end will reach the bottom nut on the outside box guide. Bending the iron will be aided by cutting one side of the angle at the 12¾-in. mark. Looking down the channel of the angle iron from the short end, cut the side to the right. Fold one side of the cut over the other side as the bend is made.

Place the bent angle iron on the loom, and mark the points at which the following three holes should be drilled: near the short end of the iron, a 7/16-in. hole to correspond with a similar hole drilled in the rocker iron; a hole slightly above the 7/16-in. hole so that the angle iron will fit over the



If the lengthwise brace in front of the box end of a 4x1 automatic loom does not prevent breakage of the lay end, a brace similar to this one may prove helpful. It is made of a 34-in. length of 1¼-in. angle iron and is fastened at one end to the rocker arm and at the other end to the bottom nut on the outside bar guide.

DRAFT UNIFORMLY

Armstrong's Cork Cots won't slick up

You won't have to worry about slicking when you run on Armstrong's Cork Cots. They keep their high coefficient of friction throughout their service life. This longer lasting grip gives you uniform drafting, stronger, more even yarn.

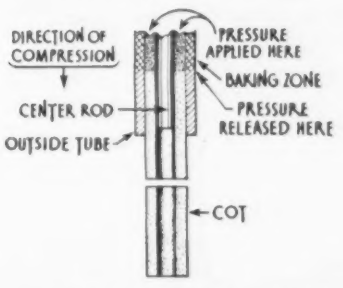
The highly frictional surface of Armstrong's Cork Cots also eliminates eyebrowing. These cots produce the least clearer waste—and place it back on clearer boards where it belongs. Thus slubs are reduced and clearer picking is minimized.

Besides good grip, these cots offer exceptional resilience. They recover quickly from most laps and hard ends. They won't flow under roll weighting. And because they are extruded, they have no hard or soft spots to grip yarn unevenly.

Armstrong's Cork Cots are also low in first cost. They have a long initial service life. When they do show signs of wear, they can be rebuffed for three or four extra service lives.

Check these advantages of Armstrong's Cork Cots on your own frames. See why they are now serving more spindles than any other roll covering. Ask your Armstrong representative for samples, prices, and full information. Or write today to Armstrong Cork Company, Textile Products Department, 8302 Arch St., Lancaster, Pennsylvania.

EXTRUSION PROCESS PRODUCES SEAMLESS CORK COTS



Armstrong's Cork Cots have no structural weakness to cause premature breakdown. Each cot is uniform in density from inside to outside, from end to end. Each compresses evenly, spins stronger yarn, lasts longer.

Better running work . . . more poundage

ARMSTRONG'S CORK COTS

ACCOTEX COTS • ACCOTEX APRONS

KINKS & SHORT-CUTS

(Continued from page 160)

picker-stick stud and against the rocker iron; and near the long end of the bent angle iron, a $\frac{3}{8}$-in. hole countersunk for fastening the iron to the box guide.

Remove the iron, weld the overlapping ends of the cut at the bend, and drill the necessary holes. Install the brace on the loom, tightening it so that there will be no play at either end. (K-585) *Bruno Pasquariello, Hawley, Pa.*

Materials-Handling Hoists Need Safeguard

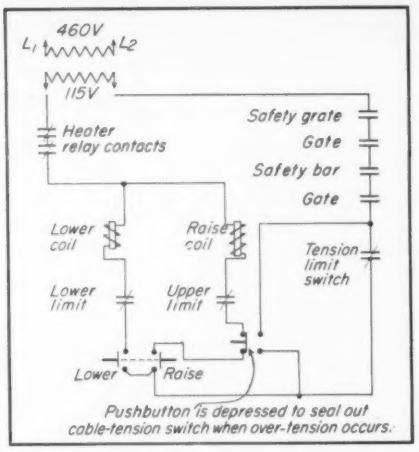
Some electrically powered devices appear to be perfect when laid out on the drafting table or when newly installed, but actual operation of the devices often brings out "bugs" that hardly could have been foreseen.

Such a device is a so-called "liner hoist," where dependence for safe operation is placed on a series of electrical interlock switches, the principal ones being the upper-travel-limit switch and the cable-tension switch. The cable-tension switch serves the same purpose as a final-limit switch in an elevator; if the shaft switch fails to open the circuit and stop the elevator, the final-limit switch on the hoist will stop the motor.

Our hoist had a by-pass switch installed to shunt out the cable-tension switch when it opened as a result of excessive cable tension caused by one of several reasons, chief among them being the failure of the upper-travel switch. This depressing of the by-pass switch permitted the load to be lowered until the tension-device switch closed and the pressure on the by-pass-switch button was then released.

This type of backing out by means of the by-pass switch worked successfully until a careless worker depressed the hoist button instead of the lower button and the cable was stressed to failure.

The change made to eliminate a recurrence of this trouble was the installation of a normally closed two-way switch that, when depressed, opens the circuit to the hoist coil of the magnetic contactor and shunts out the opened cable-tension switch, permitting only lowering of the load. Any abnormal load on the hoist trips open the circuit by means of the spring-loaded tension device, the magnetic brake holds the load, and the two-way switch permits only lowering of the load. (K-601) *Paul C. Ziemke, Oak Ridge, Tenn.*



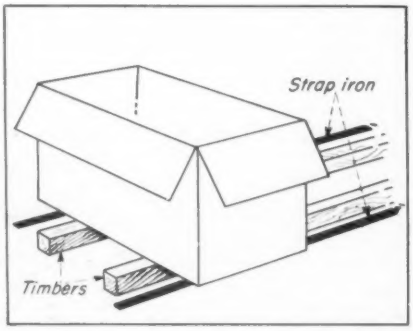
When a careless worker pushed the "raise" button instead of the "lower" button on a hoist that was overloaded, causing failure of the cable and damage to the load, a safety switch similar to the one shown here was installed. This two-way switch automatically opens the "raise" circuit when the cable-overload switch is bypassed, thus making it impossible for a worker to throw the wrong switch.

Timbers on Floor Aid Strapping of Boxes

The practice in our thread-packing room formerly was to let the boxes rest on the floor while they were packed with thread. Besides making it necessary for thread packers to stoop over the boxes to place the packages in them, this practice also made it difficult for one man to place the steel straps around the boxes.

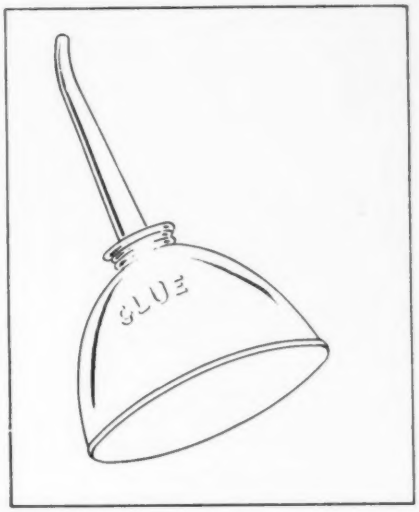
To lighten these two jobs, we adopted the practice of placing two 4-in.x4-in.x12-ft. timbers on the floor and letting the boxes rest on these timbers while the packers fill them with thread. Although the timbers do not eliminate stooping, they reduce it somewhat. The greatest benefit however, is to the man putting the straps around the boxes.

Only one man is required for this job, and he can now do it quite easily, regardless of the type of tensioning, sealing, and cutting tool he uses. An additional advantage is that the sealed boxes are more easily set or headed up from the timbers than from the floor. (K-609)



By placing two 4-in.x4-in.x12-ft. timbers on the floor and packing boxes of thread on them, we eased considerably the task of the man who seals the boxes.

Ordinary Oil Cup Makes a Good Glue Can



A pint oil can is a convenient container for glue in the weave room, or in other departments, where gluing felt or other material is an everyday task. When the can is not in use, the spout can be sealed with a small plug to guard against the glue drying out. (K-508)

Remove Silicate Deposits With Caustic-Soda Bath

Removing hardened silicate deposits from carrier rolls in continuous-peroxide-bleaching units has always been a troublesome and time-consuming operation. Cleaning with emery cloth or scraping off the deposits seems to be the method most generally used by bleacheries. This method is not only slow, but it is not always satisfactory.

A better way to do this job is as follows: Remove the rolls from the machine and cover them for about two hours in a 2% to 4% solution of caustic soda, heated to at least 180° F. Any mixing tank or other container is satisfactory, provided it is sufficiently large to allow the solution to cover the rolls completely.

The time element may vary some-

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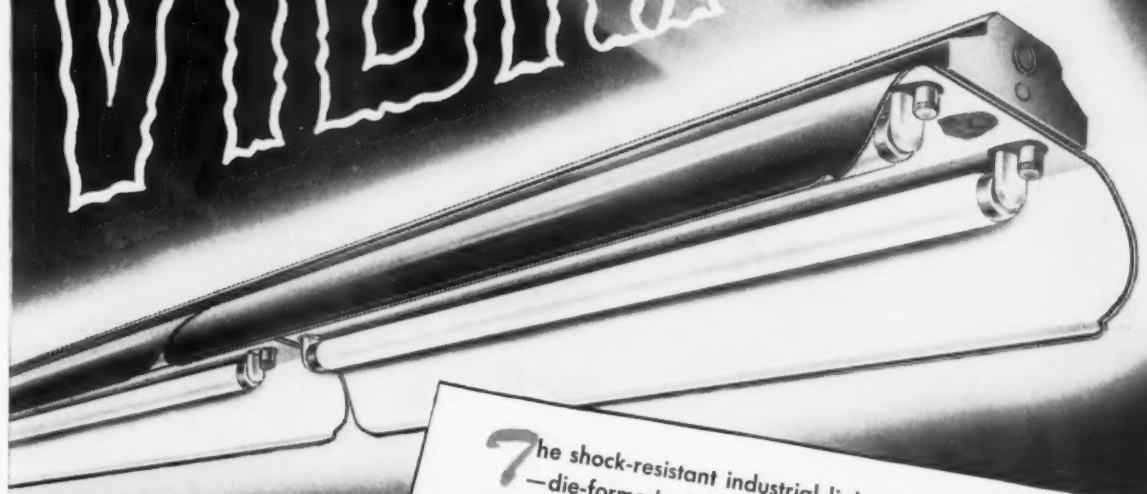

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May we send Bulletin 30-A with complete details?

The DAY-LINE

Heavy-duty industrial fluorescent fixture with porcelain-enameled steel reflectors. Designed for two and three 40- or two 100-watt lamps—unit or continuous installations. U. S. Patent Nos. 2317434, D-135375 and D-133458.

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IT'S EASY TO SEE WHEN IT'S

DAY-BRITE
Lighting

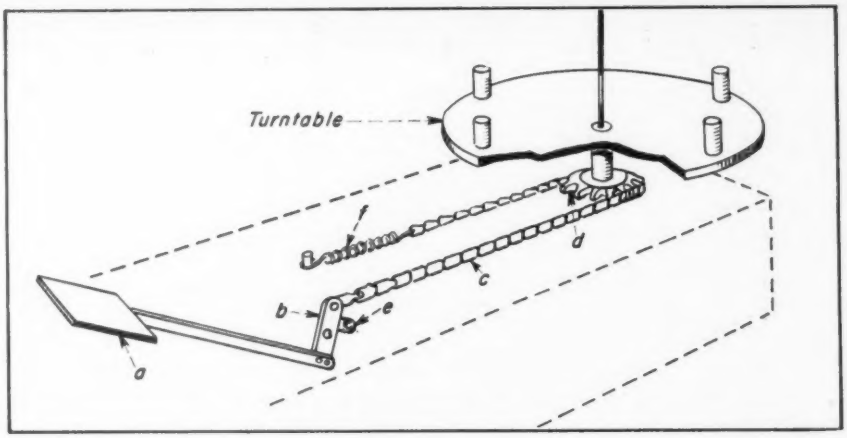
KINKS & SHORT-CUTS

(Continued from page 162)

what, depending on the thickness of the silicate deposit on the rolls. This element, of course, will have to be determined in each individual case.

The same procedure may be used for any other metallic part on which silicates have caked. It has the further advantage of removing silicate from the hard-to-get-at portions of the equipment. Such places are apt to be slighted by the operator in cleaning by hand.

The hot caustic bath also removes grease, scum, and other deposits that may be found along with the silicate and leaves the treated pieces of equipment completely clean. (*K-602*)



Wool tops, placed over the spindles on the turntable, can be turned part of a revolution by the mechanism shown here. Foot pedal a actuates b, which pulls chain c upon sprocket wheel d. This sprocket wheel turns the shaft to which it is fastened, thereby turning the table welded to the upper end of the shaft. Use of the device permits the ends of the tops to be pulled from the center coils without inserting twist.

Device Eliminates Twist During Pulling of Wool Top

In making up blends of wool for small lots, such as mill samples, it is frequently necessary to weigh out proportions of the various shades of dyed wool in order to obtain the exact blends desired. Often this procedure necessitates splitting a top to get the few pounds of a particular color needed. Pulling the end out of the center of a top and winding it around the hand, with the top remaining stationary, inserts a small amount of twist in the end. This twist is, of course, objectionable at the gilling operation.

To revolve the top and avoid inserting twist in this manner, we have devised the turntable shown in the accompanying sketch.

The table is equipped with four small spindles upon which to set four wool tops. An upright shaft, welded to the center of the bottom side of the table, supports it. The other end of this shaft rests in a step secured to the framework that serves as a support and guard for the revolving mechanism. Directly above the step, sprocket wheel *d* is fastened on the upright shaft.

Foot pedal *a* is secured to lever *b*, fixed at its center to the frame. Chain *c* is bolted to the upper end of *b*, passed around sprocket wheel *d*, and connected with one end of spring *f*.

The operator places tops on the turntable spindles and pulls the ends from the inside coils of the tops. As the ends are pulled out, the operator presses down on pedal *a*. The lower end of lever *b* is forced in a direction away from *a*. This action swings the top of *b* toward the operator. Chain *c* is pulled by *b*, turning sprocket wheel *d*, which causes the turntable to make part of a revolution.

When the operator pulls off the small amount of top needed and cuts the ends, he releases pedal *a*. Spring *f* pulls the turntable back to its previous position, the return being limited by *b* striking stop *e*. (*K-608*)

Modified Cam Reduces Sloughing-Off

Sloughed-off filling is a source of trouble in practically all weave rooms. The apparent remedy, of course, is to correct the build of the spinning quills so that the filling is sufficiently tied to the quill to prevent yarn slippage. By filing our filling cams as shown in the accompanying sketch, we have practically eliminated sloughed-off filling.

If a spinning frame is winding filling that sloughs off at the loom, cut out one of the cam depressions as shown here. A frame equipped with such a cam will wind the filling high each third time the ring rail comes up, thus tying the yarn more securely to the quill.

The cam illustrated is a standard three-point filling cam. Using a good file, cut one depression of the cam to a depth of approximately ¼ in. and round off the sides to ensure smooth running.

This change of the cam will cause the ring rail to go higher each third time it comes up than it goes the other two times. The effect of the longer traverse each third time is to wind the filling higher on the quill, thus tying the yarn more securely to the quill.

If a four- or five-point cam is being used, two alternate depressions should be filed. (*K-611*) *M. L. Watson, Griffin, Ga.*

Homemade Gage Used For Setting Rolls

Setting rolls on a drawing, roving, or spinning frame, of course, requires the use of a gage. There are many different types of gages in use, but I have found the one shown in the accompanying sketch to be quite convenient and accurate.

The holding bar, *a* in the sketch, is made of a piece of bar steel 7½x2x½ in. Lengthwise in the center of the bar is a ¾-in. slot 6½ in. long. Four studs, 4 in. long and made from ¾-in. steel rod, are used as gage points.

Cut one-half the length of each stud down to approximately ½ in. in diameter, and thread the ends of these lengths to receive ½-in. nuts *d*. Make four collars with offset shoulders *c*. The sides of these sleeves should be squared somewhat so that they will not turn in the slot in *a*.

To assemble the gage, place the

Early Sizing of Yarn—Believed to be circa 1805
The sizing was prepared by boiling in a kettle. Then the yarn was dipped in the sizing to coat it, and hung on racks to dry in the open.

Why De-Size?

Sizing is added to the warp threads to strengthen and protect them during the weaving operation. Once it has served its purpose, the sizing must be rapidly and effectively removed so that it will neither delay dyeing, bleaching or finishing, nor impair the quality of the work.

Rapidase gives complete satisfaction in
de-sizing cottons, rayons and mixed goods.

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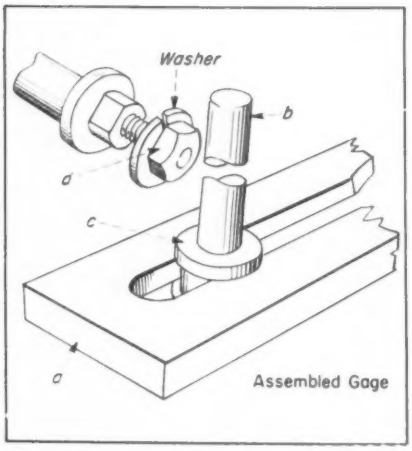
KINKS & SHORT-CUTS

(Continued from page 164)



This gage can be made long enough to use on any drafting-frame rolls in the mill. Set the studs to correspond with the roll settings desired, and use these points for adjusting the roll stands of the frame.

turned-down end of stud *b* through collar c, and place c in the slot in bar a. Put a lock washer over the threaded end of stud *b*, and screw up nut *d*. This procedure should be followed for the other three studs.

When the gage is assembled, cut or punch a measuring point on each shoulder, c, to correspond with the centers of studs *b*.

To use the gage, loosen nuts *d* and set the studs to correspond with the roll settings desired. For example, if the spread between the back and third rolls of a drawing frame is to be 1-11/16 in., tighten one stud of the gage at the end of the slot in a, measure 1-11/16 in. from the center of this stud, and tighten the second stud so that its center is at the measured point. In like manner, set the third stud at a spread to correspond with the second drawing roll, and the fourth stud at a point to correspond with the front drawing roll. (*K-612*)

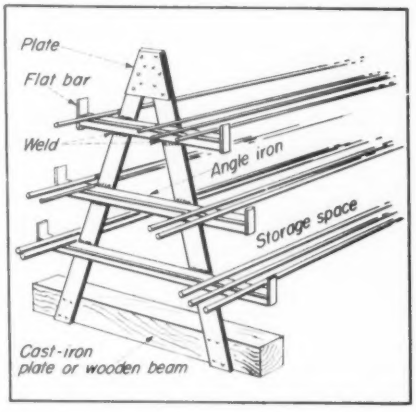
Shop Housekeeping Aided by Rack For Stock

Storing pipes, bars, shafts, etc. was a problem in our shop until we built a rack similar to the one shown in the accompanying sketch. Since making this rack, our stock can be kept in its proper place, is not in our mechanic's way, and does not detract from the stock-room appearance.

To make such a rack, secure a sufficient quantity of 2-in. angle iron to make two supporting legs about 6 ft. long and three crossmembers about 3½, 5, and 6½ ft. long respectively. Bolt or weld the tops of the legs to a steel or cast-iron plate, as shown in the sketch. The lower ends of the legs should be about 3½ or 4 ft. apart to insure substantial support and may be bolted to a wooden beam or secured to a metal plate.

To each end of the three crossmembers, weld a 1-ft. length of bar stock at right angles to the length of the members. Above the base of the rack, weld or bolt the 6½-ft. member crosswise to the two legs, so that one side of the angle serves as a rest for storing the material and the bar stock at the ends serve as stops for stored material. At equal distances up the legs, secure the 5-ft. and 3½-ft. members.

This assembly forms one end of the storage rack. Make another in the same manner for the other end. If different lengths of stock are to be stored, it may be desirable to make other supports to stand between the two end supports. (*K-553*)



A rack made in this manner is useful in shops for storing shafts, pipes, bars, etc. The legs are approximately 6 ft. long, and the crossmembers are 3½, 5, and 6½ ft. long. These dimensions, of course, can be varied at will.

Splashboard Protects Rayon-Tinting Operator

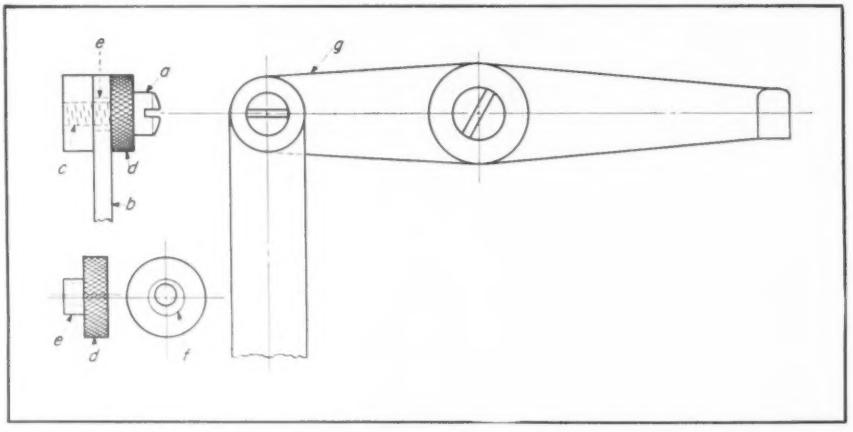
For soaking and tinting skeins of rayon yarn, we use an ordinary water trough for holding the soaking liquor. The operator places the skeins in the trough and removes them by hand. This practice, of course, makes it necessary for him to stand so close to the trough that frequently his clothing is splashed with the liquor.

To protect the operator's clothing, we cut a board, 1 in. in thickness, to fit inside the trough and extend upward above the rim of the trough. The board is fastened with *U*-bolts to the pipes through which the liquor enters the trough. This extra height to the side of the trough serves as a splash board to prevent the dye liquor from getting on the operator. (*K-595*)

Thrust-Bar Screw Holes Repaired With Washer

Sometimes the hole in a thrust bar on a full-fashioned hosiery machine becomes worn so much that the lever to which the thrust is transmitted becomes, in effect, too short. The usual practice when this condition occurs is to discard the thrust bar and install a new one. We have found that a simple repair job will make it possible to continue the lever in use.

Remove screw a, shown in the accompanying sketch, from thrust bar *b*. Drill hole c to a size slightly larger than its standard size. Make washer *d*, with eccentric shoulder e, from a piece of steel rod. Knurl *d* so that it can be easily turned to make fine adjustments to the thrust bar. The hole for screw a should be drilled through washer *d* and eccentric e about 1/32 in. off center, as shown at *f*. (*K-605*) *Walter A. Simond, Franklin, N. H.*



Thrust bar b can be continued in service after screw hole c has worn so much that the level is, in effect, too short by making the eccentric washer shown here.

Change to Paper Tube Spinning This New Low Cost Way

Get up to

40% MORE YARN PER BOBBIN

Illustration shows the larger warp package produced by paper-tube spinning on the Joanna Aluminum Spindle Adapter compared with the conventional package.

Get Ready Now for those Competitive Days Ahead—with Improved Spinning

WITH the New Joanna Aluminum Adapter, your spindles can be converted to paper-tube spinning—for either straight or tapered bobbins. The paper bobbins will be driven correctly—from the top. In warp spinning, you will get up to 40% more yarn per bobbin, cut your doffing and spooling costs, reduce ends down 50% per hour.

Your bobbins will be doffed every ten hours in many cases, instead of every six hours and twenty minutes for the old wooden type. Your saving in doffing and spooling alone will pay you 30% annually on your investment in converting with the new Joanna Adapter.

The cost of fitting the Joanna Adapter to your spindles, including complete assembly, grinding and finishing spindle blade acorn and whirl, usually does not exceed $1.50. The Adapter is being used now by Joanna Textile Mills, Goldville, S. C., and other leading mills. Send samples of your present spindles to us for quotation. We invite you to try the Joanna Adapter on one frame and compare the improved results.

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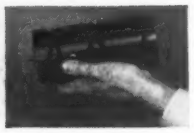
WEAR-RESISTING METAL ROLL

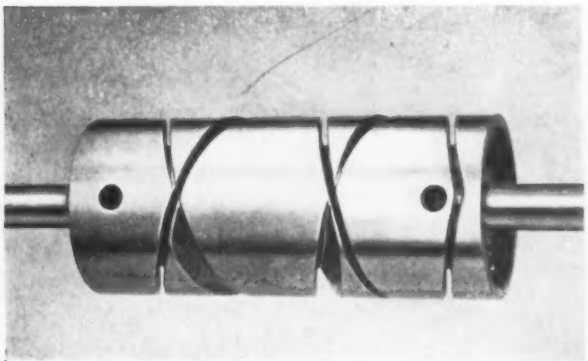
FOR CONING SPUN RAYON YARN



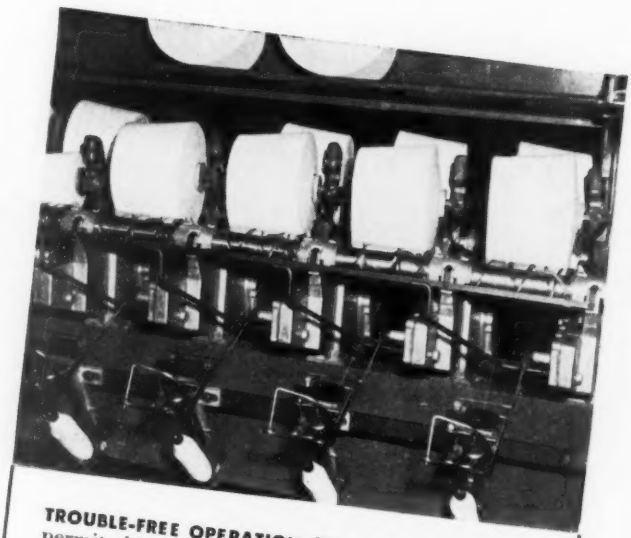
The very same advantages enjoyed by the hundreds of mills coning cotton yarn on Roto-Coners* are available to spinners of synthetic staple yarn.

Roto-Coners* equipped with wear-resisting metal rolls are giving a number of mills on spun rayon the higher production, lower maintenance cost and superior quality of package which result principally from the exclusive Universal design of Rotary Traverse.

Mills winding spun rayon are invited to write for Bulletin 144. All the advantages it describes for cotton yarn are equally true for spun rayon. Universal Winding Company, Providence, Boston, Philadelphia, Charlotte, Utica, Atlanta, Chicago, Los Angeles, Montreal, Hamilton.

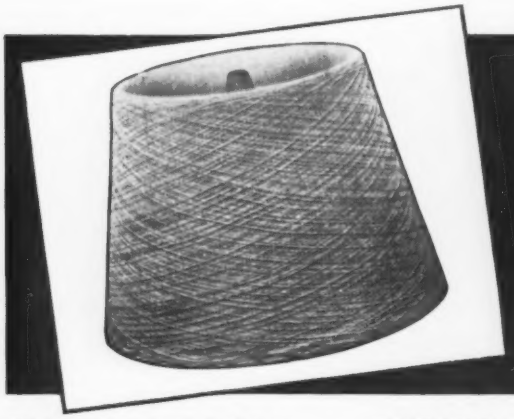


ROTARY TRAVERSE made of wear-resisting metal. Roll drives package, grooves guide yarn. No slip drum to nip yarn. Groove arrangement shown builds proper shape of knitting cone; quick reversal of yarn at end of traverse avoids underwinds and cobwebs.



TROUBLE-FREE OPERATION. Use of Rotary Traverse permits high winding speed—550 YPM for paper coning. Elimination of cams and other fast-wearing reciprocating parts helps give minimum maintenance cost—averaging ½ of 1% per year on investment.

23.6.11



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Open-Wind Cones for Knitting

WARPING CONES • DYEING PACKAGES • PARALLEL TUBES FOR TWISTING

LETTERS to Pete & Bill, discussing material in this department, are paid for when published. Suggestions for the Pete & Bill dialogue will also be paid for if used. If these pages interest you, contribute something to interest others. Address PETE & BILL, Textile World, 330 West 42nd St., New York 18, N. Y.

Pete & Bill

THE HELPFUL WORKER'S IDEAS

Should the supervisor give personal attention to some workers' suggestions, or handle them all according to a routine?

WHAT'S ALL THE HURRY FOR THIS MORNING? WHY SO OUT OF BREATH?
JUST SPENT A HALF HOUR WITH TOM, THE OILER, WHEN I'VE GOT A LOT OF SCHEDULING TO DO.
1
WELL, WHY LET PEOPLE IMPOSE ON YOUR TIME? DO FIRST THINGS FIRST!
TOM HAS A GADGET HE WANTS TO PUT ON ONE OF THE MACHINES. WANT'S PERMISSION. MAY BE GOOD DEVICE, BUT I'M NOT SURE OF IT.
2
DON'T JUMP AT EVERY SUGGESTION WHEN YOU'VE OTHER THINGS TO DO. PUT THE OILER OFF. UNLESS HE'S DOGGONE SURE HE'S GOT SOMETHING GOOD, HE WON'T MENTION IT AGAIN.
BAH! THAT'S THE RUN-AROUND SYSTEM.
3
YOU WON'T LOSE A THING IN THE END. WILL HE, READERS?
TAKE IDEAS WHEN THEY'RE HOT AND YOU'VE GOT 'EM AT AT THEIR BEST, EH? READERS?
4

Letters From Readers

Should Foster Cordial Relations

"Supporting Social Events"
(Pete & Bill, Oct., 1946)

Dear Pete & Bill:

In the near future any mill which does not have a modern, reasonable industrial relations set-up will be placed in a position of great disadvantage. Cordial overseer-employee relations are the foundation of the industrial-relations organization, and overseers will find that attending employee outings and banquets will lead to congenial relations with their employees and will be reflected in future benefits to the mill. Loyal employees who feel that their overseers appreciate their work and respect them as individuals are of inestimable value to any mill. (PB 1201)

Persistent Absentee Is a Bad Apple

"Handling the Absentee"
(Pete & Bill, Nov., 1946)

Dear Pete & Bill:

Absenteeism is a human fault, and there's no way to set up too stringent a general rule for it. Some people are out more than others, and particularly an organization employing women must expect it. So many working women are married that exceptions must be expected because of the home duties, illness in the family, their own physical difficulties.

A mill should keep a record of attendance, and if any employee is persistently absent for no apparent reason except that it's after pay-day, it's better to move that person out. It's a bad example. But, those who are absent and can properly explain its necessity should be retained.

It is often desirable to explain in person, or by notice on the bulletin board, the need for production and the loss when a worker is absent. That

system worked in many cases during the war when the worker realized how much he personally counted. The same could be done now. But for the person who takes off after pay-day just to "do the town," there's no use in trying any system. And, in the general run, no individual is so important that he cannot be spared. Just as "one bad apple will spoil the barrel," it's important to avoid one bad employee, especially in these days when there seems to be so little desire to be loyal and so much lack of the moral fortitude to work. (PB 101)

Don't Turn Out the Old Men!

"The Old Employee"
(Pete & Bill, Sept. 1946)

Dear Pete & Bill:

No, I feel that I would really discourage the move to get rid of older employees merely to recruit a younger and possibly a more vigorous staff. The adept and experienced, though up in age, should be retained in my judgment in preference to the younger men. The old employee should be retained until he actually becomes inactive and incompetent from age.

More reverence should be given the aged than to turn them out, probably without employment. (PB 1102)

Quality Control Not Proper Subject of Meetings

"Quality Control Meetings"
(Pete & Bill, June, 1946)

Dear Pete & Bill:

In the management of a cotton-mill, each department is a separate unit. Between departments, there is no overlapping of authority. There is, however, a great deal of overlapping responsibility. And it is at this point that the superintendent fits into active management. He is the connecting link between the various departments.

Quality of product is a matter for which the superintendent alone is responsible. His plans and ideas must be carried out. He must of necessity depend on the overseers to carry out the detail which his idea of quality demands. As the connecting link, it is his privilege to talk over any matters connected with the business. Should the quality of the product be unsatisfactory, it would be natural to talk things over with one, or all, of the overseers. But group discussions should only be used where a definite change in policy was to be considered. In matters of management, I do not think group discussion has any place. (PB 107)

Books of Interest

A Round Up of New Fiber Data

THE NEW FIBERS, by Joseph V. Sherman and Signe L. Sherman; D. Van Nostrand & Co., New York; 538 pages, $5.00.

Here is a volume which will bring its reader up to date on current fiber developments. Although devoting greatest space to the synthetics, the authors have included latest developments relating to the older natural fibers. There is also a chapter on chemical treatments which aids substantially in rounding out the picture.

Following a general introduction devoted to fiber comparisons and background, "The New Fibers" proceeds through the following subjects devoting a chapter to each: nylon, vinyl-resin fibers, vinylidene-chloride fibers, glass fibers, polyethylene fibers, other synthetic fibers, casein fibers, soybean-protein fibers, other protein fibers, improved rayons, rayon-staple fiber, economic aspects of rayon, new cellulose fibers, miscellaneous new fibers. The volume concludes with information on chemical treatments, classified data on applications, a list of trade names, a chapter on current research and the future of fibers, a listing of U. S. patents of the last 10 years covering processes related to the fibers discussed; and considerable tabulated data on fiber use.

The book names men and firms who are associated with the various fiber developments now current, so that the textile technician who may desire to follow some of those on his own account has the key for so doing. There is a bibliography of references at the conclusion of each chapter, which lists numerous articles from TEXTILE WORLD among other sources.

New Heating Principles

RADIANT HEATING, by T. Napier Adlam; The Industrial Press, New York; 472 pages, $6.00.

Although interest in radiant (or panel) heating of buildings has been growing rapidly, references to the subject are chiefly in isolated technical paper. The book gives information on design, installation, and control of hot water, steam, warm air, and electric radiant-heating systems for buildings. In addition, the related, but relatively new, subjects of snow melting and radiant cooling are discussed in detail. The volume is a working manual for engineers and builders.

Sources and Data on Chemical Auxiliaries

TEXTILE CHEMICAL SPECIALTY GUIDE, 1946-7 edition. Textile Book Publishers, Inc., New York 16, N. Y.; 408 pages, $5.00.

This is the fourth edition of this buyers' guide to textile chemical products, and contains the offering of 193 American manufacturers. There are three major classifications: (1) by company name, (2) by use, and (3) by name of product. There are 2,000 chemical auxiliaries listed.

Jobs in the Field of Fashion

KEYS TO A FASHION CAREER, edited by Bernice Gertrude Chambers McGraw-Hill Book Co., New York; 238 pages, $3.00.

Although written primarily for the man or woman who may be planning to enter some phase of fashion work, this collection of articles by important people in various branches of the fashion field makes a good refresher course for textile men to instruct them about the many interlocking fabric interests which start at the mill and end with the consumer. The editor of this compilation asked prominent designers, stylists, buyers, promotion directors, etc., to describe for the beginner the duties involved in their present work and how their own training landed them where they are today. There is a foreword by Edna Woolman Chase, editor of Vogue, in which she names "trained and distinguished taste" as the top prerequisite for entering a fashion career.

Among the contributors to this volume are the following: Mimi Blaker, stylist for Galey & Lord, Inc.; Genevieve Huss, stylist for Julius Forstmann, Inc.; Madeleine C. Walther, president of Walther Mfg. Co.; Hope Skillman, president of Skillmill, Inc. Marjorie Holligan, stylist for Celanese Corp. of America; Pauline P. Alpar, stylist for Wesley Simpson.

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to check the casters and wheels on your equipment

You may find that the use of obsolete equipment is reducing efficiency and profits in your mill.

Where your rolling equipment is found wanting, replace with COLSON casters—the quality line that is known throughout the textile industry for service and durability.

COLSON can supply any size or type of caster or wheel—all built to "take it" in textile mills. They roll easily over all floors, swivel freely, and are rust-resistant. A wide range of models can be equipped with thread guards.

The COLSON Corporation also manufactures many types of materials handling equipment—a complete line of hand trucks, platform trucks, box trucks, drum and barrel trucks, and special devices.

When you have a caster or materials handling problem—write us.

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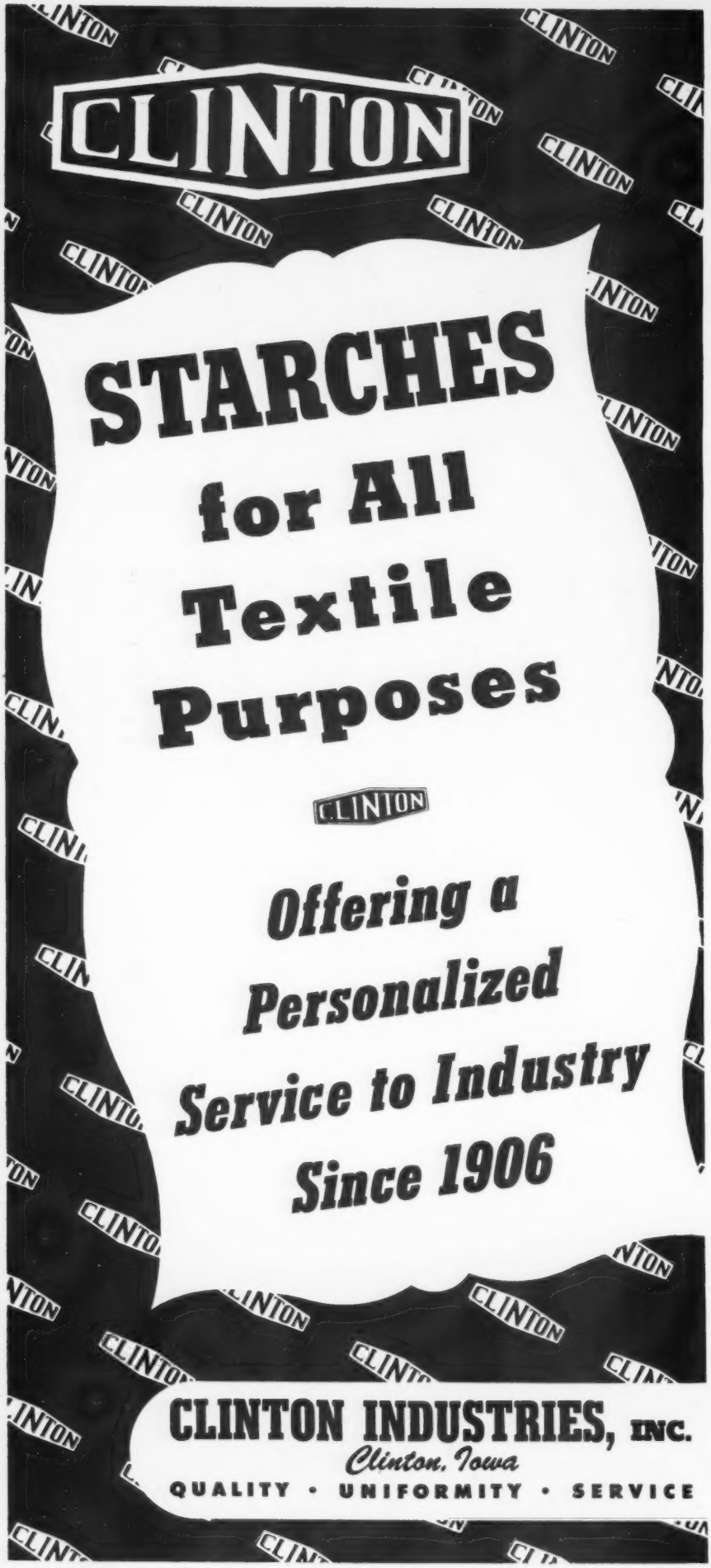


Round Table

FOR EXCHANGE OF IDEAS

The Round Table is designed to supply a meeting place where mill men can discuss problems among themselves. It is open to all readers for discussion of subjects relating to mill management and operation. Names of contributors to the Round Table will be held confidential if so requested, but sign contributions with your real name and address as evidence of good faith and to permit payment for items published. Address contributions to: Editor Round Table, Textile World, 330 West 42nd St., New York 18, N. Y.

Wool Spinners Contribute To Cellulose Technology

Increasing use of synthetic fibers is presenting many problems to the woolen spinner.

Rags form the basis of the raw material for low-grade woolen yarns; and in the past the only other fiber the spinner had to worry about was cotton, which was removed without very much difficulty in carbonizing. Cotton, of course, is much cheaper than wool; but some of the newer synthetic fibers are more valuable. Attention must therefore be directed to the need for recovering these expensive fibers for re-use rather than destroying them, as is the case in carbonizing cotton.

The labeling of materials and fabrics is a step in the right direction. A tag to show the identity and percentage of different fibers in every garment would overcome many difficulties. Even if problems of identification are solved—and a foolproof means of doing this appears to be some way off—there still remains the problem of separating the individual fibers. Acetone will quickly dissolve cellulose acetate, and the solution can be re-used or used for other products, such as lacquer.

These points draw attention to the need for research into suitable ways of

Back to Britain – riding the reels...

In 1911 the first successful rayon plant in America began operations using British inventions and British capital. Since then, American ingenuity has made many contributions to rayon's progress in bringing the total U. S. production to approximately 850,000,000 pounds in 1946. No development in the industry, however, has attained the importance of the one which has now gone to Britain "riding the reels". Soon, a major British rayon producer will begin operations at a plant in Carrickfergus, Northern Ireland, using the Continuous Process developed by Industrial Rayon Corporation.

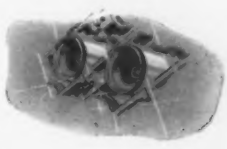
By this method, rayon yarn is spun, washed, bleached, treated, dried and twisted as a single thread in one continuous sequence of operations. As the yarn travels over a cascade of reels, processing solutions are applied evenly to every inch of every filament, thereby producing the most uniform yarn the industry has ever known.

American textile mills and consumers have benefited from the advantages of the superior yarn produced by this process since 1938. Adaptation of the process to tire yarn manufacture in 1942 produced equally successful results. In a program inaugurated in 1945, patent rights were made available for foreign purchase and today the Continuous Process is ready to serve the world.

INDUSTRIAL RAYON CORPORATION

CLEVELAND, OHIO • NEW YORK OFFICE: 500 FIFTH AVENUE

Makers of *SPUN-LO Rayon yarn and cloth • *TYRON Rayon yarn, cord and fabric



*Reg. U. S. Pat. Off.

★ *Accepted by the Textile and Dyestuff industry as the standard accelerated testing machines for determining the light fastness, weathering and washing qualities of materials.*

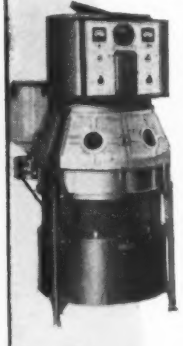
Weather-Ometer
Fade-Ometer
Launder-Ometer

ATLAS *twin arc* WEATHER-OMETER

Faithfully duplicates the combined weathering effects of sunlight, rain, heavy dew and thermal shock; accelerated to reduce years of actual weathering to a few days of testing.

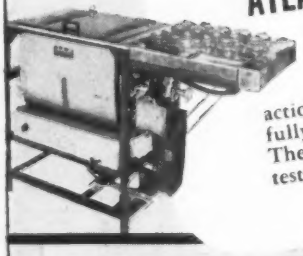
The new Twin-Arc Weather-Ometer is equipped to take large size textile specimens in order to meet the new Federal Specifications demanding accelerated weathering tests. Full automatic control of light and water periods is provided by the Atlas cycle timer unit which can be set to meet standard and special requirements of weathering tests. A direct reading thermal regulator, automatic shut-off switch and a running time meter are included as standard equipment. After setting exposure cycles on the control panel the Weather-Ometer can be safely left in continuous operation overnight without attention except to replace carbons once in 24 hours.

The Atlas Weather-Ometer proves the durability of materials under exact conditions of weathering found in actual use in outdoor exposure.



ATLAS FADE-OMETER

The recognized standard testing machine for determining the fastness to light of dyestuffs and dyed fabrics. Specimens are rotated around the Atlas Enclosed Violet Arc—the closest approach to natural sunlight—in masked holders. Automatic temperature control to within ±3° F. and humidity regulated by a constant reservoir according to requirements of tests. Operation is completely automatic without attention from operator; can be left in continuous operation overnight.



ATLAS LAUNDER-OMETER

The standard laboratory washing machine of A.A.T.C.C. for testing color fastness, staining, shrinking, resistance to washing and mechanical action. All factors including washing action can be carefully controlled and reproduced identically at any time. The new preheating loading table increases accuracy of tests by starting all samples at uniform temperature.

ATLAS ELECTRIC DEVICES CO.
361 West Superior Street, Chicago 10, Illinois
Originators and sole manufacturers of accelerated testing devices for over a quarter of a century.

recovery of all the fibers that might be found in rags and also suitable means for using waste wool as a basis for the manufacture of regenerated protein fiber. (R-322)

Cotton Roll Blanket Gives Smoother Sized Yarn

The report on slashing practices followed by Georgia mill men (T.W., Dec., 1946) was quite interesting, particularly that part of the discussion on page 202 that dealt with squeeze-roll blankets. My experience has been that quite a bit can be done at this point to obtain a smooth thread, which is part of the objective in slashing.

Close examination of the sized yarns will reveal that the yarn is quite rough when the blanket on the finishing squeeze roll is new. As the blanket wears, the yarn becomes more smooth.

For years we used two blankets on our squeeze rolls, the first being woolen cloth and the second, or outside, being cotton. In this way we obtained a much smoother yarn.

The cotton cover should be woven of rather course yarns in a weave of relatively low construction. It should consist of not more than three wrappings, and it should be taken off the roll and rinsed in hot water twice a week. (R-321)

Formula Approximates Weight Per Cubic Inch

To calculate the weight per cubic inch of yarn, as requested by the author of R-350 on page 184 of the December issue of TEXTILE WORLD, the following formula may be used for yarn on a spool, bobbin, or beam: (diameter of spool head^2— diameter of spool barrel^2 × length of spool × 0.7854) ÷ cubic inches in 1 lb. = volume of spool.

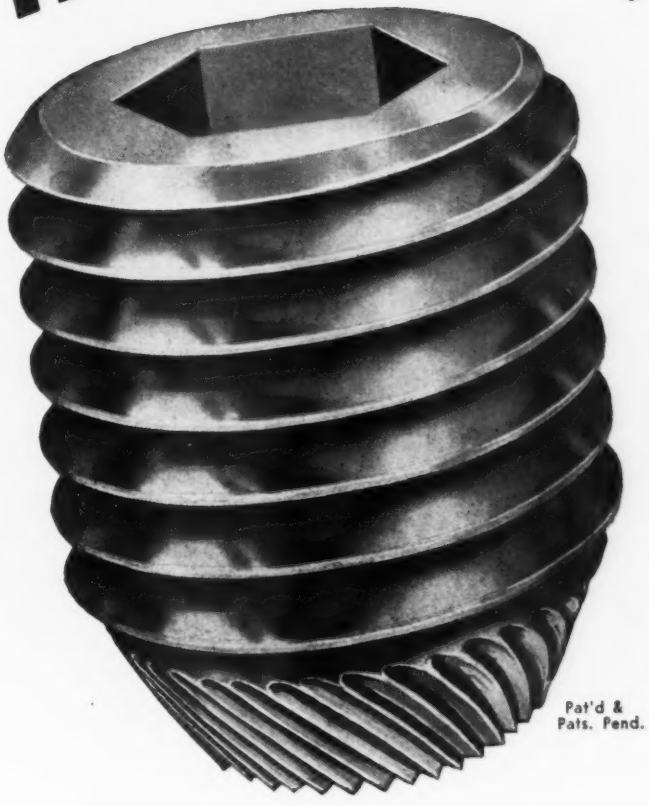
As pointed out in R-350, many factors influence the amount of yarn that can be wound on a container. These factors—twist, yarn denier, humidity, winding tension, size of spool, etc.—vary so widely from mill to mill that it would be difficult to attempt to arrive at anything like a broad standard or a formula that would give absolutely accurate results in all cases.

An extensive check in 100 mills revealed that beamed cotton yarns showed the following averages:

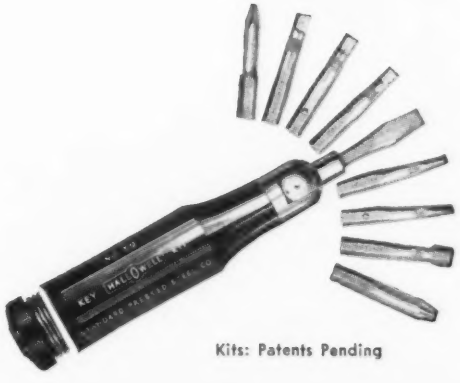
Unsized — 56 cu. in. per lb.
Sized — 60 cu. in. per lb.

Note, however, that these figures are averages for 100 mills. No details as

HIGH SPEED VIBRATION?



Pat'd & Pats. Pend.



Kits: Patents Pending

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KNURL POINTED

SOCKET SET SCREW

Its knurled self-locking cup point will not budge—you can depend upon it—for that knurled cup point digs-in and holds regardless of HIGH SPEED VIBRATION!

The most critical buyers—the most particular maintenance men know this and that's why there are millions upon millions in use in the leading mills and plants. Ever increasing numbers of satisfied customers SPECIFY "Unbrako" Self-Locking Socket Set Screws with the knurled cup point.

You can't screw socket screws in or out without a hex socket wrench—so why not get our No. 25 or No. 50 "Hallowell" Hollow Handle Key Kit which contains most all hex bits.

"Unbrako" and "Hallowell" products are sold entirely through distributors.

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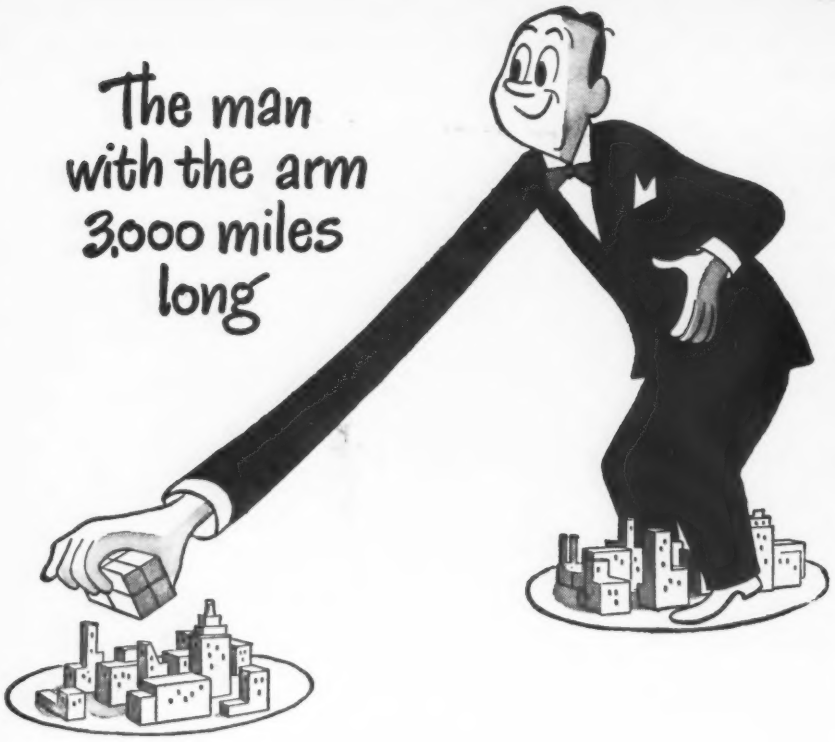

In his business — just like yours these days — he is always running out of supplies and parts he needs in a hurry. Yet customers have to be satisfied.

Well, he doesn't have a nervous breakdown. He doesn't lose customers. Instead, he gets *what* he needs *when* he needs it by specifying Air Express delivery.

"Air Express," he said, "is like reaching out to any supplier's warehouse *wherever* it is — and picking up just what's wanted. Air Express puts the most distant suppliers *right next door.*"

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- Low rates. • Special pick-up and delivery at no extra cost.
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to the number of yards per beam, yarn number, twist, size take-up, moisture content, etc. are given. The figures therefore become arbitrary standards. They can be used by a mill only for comparison.

The formula given here must be considered in the same light. The best procedure for using it would be for a mill to test a number of spools or bobbins, as 100 or 1000, by weight and determine the average weight per bobbin; and then calculate the cubic inches per pound for the average weight.

In all probability, there will be a difference between this figure and the volume figure arrived at by the formula. The mill should then work out a correction factor to apply to the formula, so that the results of the formula will agree with the actual weight-test results. The formula would then constitute a workable tool for that particular mill. (*R-323*)

Check These Points For Even Shades in Woolens

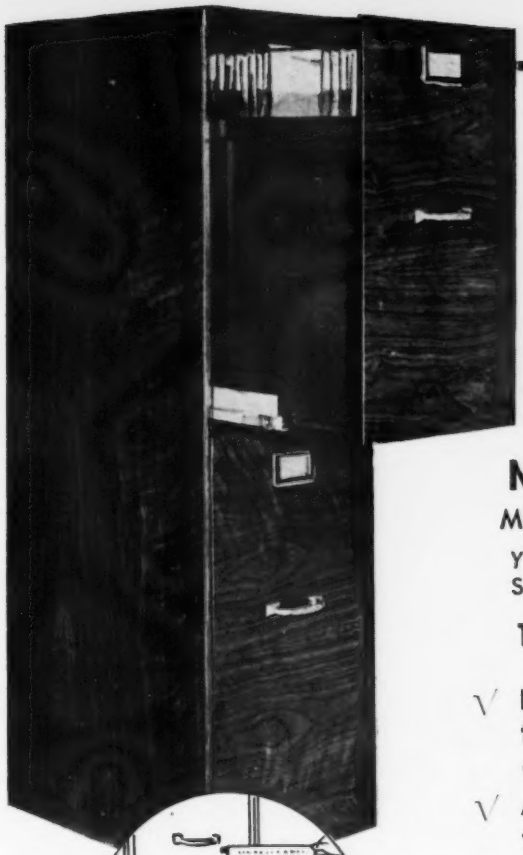
I often hear woolen-mill men complain of shady or cloudy cloth. I should like to outline briefly our practice for combatting this problem.

Where different colors and grades of stock are run, the best method of blending the mix is the sandwich method. Proper proportions of the grades and colors of stock should be laid down near the mixing machine. The mix should be fed to the feed box by taking stock from all the layers simultaneously. After the mix has been run through the blending machine, the stock should be laid out in layers again and fed back through the blender. A third, and even a fourth, run is better for many blends.

The pan scale on the Bramwell feeder to the card should be checked for even feeding. Also check the feed on the finisher card. The stock should come out even with the edge of the cylinder to ensure a uniform roving on the end spool. Making a small amount of waste at this point is preferable to a non-uniform roving.

When the cards are being started up after they have been stripped, run the spools full and make waste of the roving. This practice will guard against variation in color and size of roving, since the working members of the card must fill up again before they produce a uniform roving.

Check the weight of roving on the finisher card at frequent intervals. On some cards the workers and strippers are so close together that the long fi-



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Lane

READI-SWATCH SAMPLE CABINETS

Now Available for General Distribution to

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Yard Size Swatches At Your Fingertips for SHOWROOM SALES . . . DISPLAY . . . PERMANENT RECORD . .

THE LANE "READI-SWATCH" SYSTEM GIVES YOU

- √ **Room for 300 to 500 samples in a cabinet the size an ordinary four drawer filing cabinet.**
- √ **A 36 inch swatch — large enough to get the feel of the material.**
- √ **The full width of the cloth FROM SELVAGE TO SELVAGE.**
- √ **NO WRINKLING . . . NO FADING—swatches kept clean and safe.**
- √ **A permanent INDEXED record of all fabrics used or manufactured.**
- √ **Elimination of unnecessary handling of fabrics on tubes.**
- √ **A handsomely finished cabinet — all steel — ball bearing suspension slides, General Lock.**

Write for illustrated brochure

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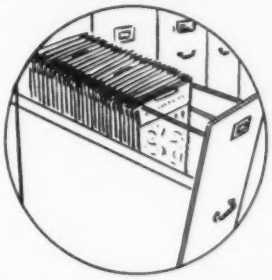
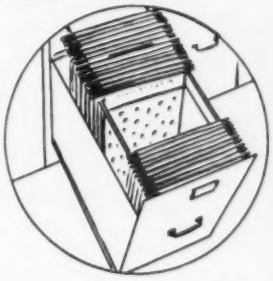
Select the sample—large enough to feel — always presentable — clean—unwrinkled—unfaded.



The swatches hang neatly from metal sliding tabs — easily arranged for ready reference — plenty of room for all necessary information on the cardboard holder.



200 samples in this drawer and room for lots more!

A Lane installation in a large showroom. 4,000 samples neatly and safely stored away—yet available at an instant's notice!

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WRITE TODAY FOR CHARTS SHOWING COMPARATIVE RATINGS ON FLAMMABLE LIQUID FIRES AS DETERMINED BY NATIONALLY RECOGNIZED APPROVAL AGENCY.

Highest Ratings for Speed and Effectiveness

WITH THE NEW ANSUL-DUGAS DRY CHEMICAL
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Speedy-fast action is the first essential in preventing major fire damage. The NEW Ansul-Dugas Extinguishers, for Class B and C fires have the highest ratings for SPEED and EFFECTIVENESS, pound for pound, as determined by impartial authority. These highest ratings mean positive put-out of your incipient fires by ANY of your employees.

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FEATURES OF THE NEW ANSUL-DUGAS EXTINGUISHER

- Greatly increased fire-killing power.
- Expert extinguishing by inexperienced operators.
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- Greater fire-fighting effectiveness, pound for pound, dollar for dollar.
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- Increased fire-fighting capacity without increased weight.
- Engineered to resist corrosion.

ANSUL CHEMICAL COMPANY
FIRE EXTINGUISHER DIVISION, MARINETTE, WISCONSIN

bers are carried from one stripper to the next worker, by-passing the cylinder. This conditioin will cause uneven roving. It can be corrected by reversing the ends of every other worker or by running every other worker backwards.

At the spinning frame, mule or ring, the bands should be checked often to see that they do not run slack, otherwise, improper twist will be inserted in the yarn.

Other points to watch constantly are the use of oil that is too heavy, uneven tension on the yarn while it is being run on the 40-end spooler and from these spools to the warp reel, high and low sections of warp to the reel, loom harnesses not properly timed, sticking tension bands on beam heads, uneven soaping in finishing, etc. (*R-325*)

Topping Stands and Bars Involve an Extra Operation

The advantage of using stands and bars for topping full-fashioned-hosiery press-offs, recommended in K-588, page 166 of the December issue of TEXTILE WORLD, is questionable. We have been topping our press-offs since about 1900; and since we were topping onto the transfer bars by hand before topping stands were introduced, we have continued that practice. We have tried the stands, but we found the direct way faster.

If a set is spoiled, we top it at the same length and bar on. For single press-offs above the narrowings, we top at any length on the same bar. Below the narrowings, we top just below the narrowings and at the beginning of the heel splicing. Heels are always topped at the beginning of the heel, and usually on one side only.

In this way we save waste and are often able to get a full set instead of a set that is short one or more stockings.

Some mills, of course, may prefer to use topping stands; but the use of the stands involves an extra operation because the fabric must be transferred from the stands to the bars. Loopers have to top with the fabric both sides up; topping on the bars is done with the face of the fabric up and on the stands with the face down. (*R-315*)

TEXTILE WORLD *embodies the following antecedent and absorbed publications: Industrial Record, Manufacturers Review and Industrial Record, Textile Record, Textile World Record, Textile Manufacturers Journal, Textile World Journal, Posselt's Textile Journal, Textiles, and Textile Advance News.*

FROM START TO FINISH

Permutit protects process water, cuts cost for hundreds of mills!

EVERYONE in the textile picture requires pure process water. Spinners, weavers, dyers, finishers, converters—all know that impurities in their water supplies could disturb chemical reactions, spoil the finish of fabrics, and cause spotty, off-color dye lots. Permutit* removes these impurities—provides pure process water, increases efficiency, speeds operations!

- More and more modern mills have turned to Permutit Water Conditioning equipment to find an economical, efficient means of controlling the quality of their process water. Plan now, to see how Permutit protected process water will help in your mill. Write for full information to The Permutit Company, Dept. TW2, 330 West 42nd Street, New York 18, N.Y., or Permutit Company of Canada, Ltd., Montreal.

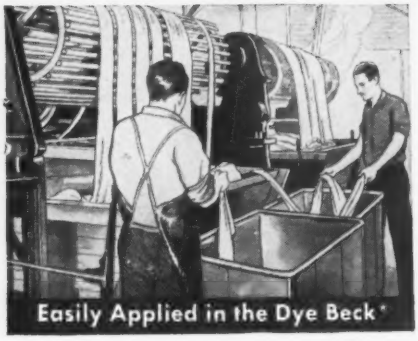
PERMUTIT

WATER CONDITIONING HEADQUARTERS

*TRADEMARK REG. U. S. PAT. OFF.

Smooth, Silky, Drapable Hand

Unusual Resistance to Washing


Easily Applied in the Dye Beck*

Stable . . . Lasting Effects

ALL THESE AND MORE
with ONYXSAN LG!

If you want an unusually smooth, silky, drapable hand for your fabrics—look into this newest unit in the Onyxsan line of cationic softeners.

Not only is the finish unusual, but it is exceptionally durable, particularly in its resistance to washing, on other than cotton or rayon fabrics. (On *these* two fibres the effect is *permanent!*)

Onyxsan LG offers economy, too, because of the small amounts required to obtain its characteristic finish.

•••••

PROPERTIES—Stable to hard water, chlorides, sulphates, organic acids and small amounts of mineral acids. Substantive to all textile fibres. Concentration of active ingredient, 45%. 1% solution has a pH between 7 and 8. Soluble in water. Incompatible with anion-active materials.

Does not deteriorate in storage. Treated fabrics do not develop odors, show color alterations or mark-off. They do not stiffen in storage.

APPLICATIONS—Major use: Imparting exceptional smoothness, softness and drape to any fibre. Effect is permanent on cotton and rayon; very durable on other textiles. The Onyxsan action, unlike ordinary superficial surface lubrication, is due to effects produced *in* the yarn itself. Onyxsan LG is also a most effective emulsifying agent.

**Or in the pad, jig or quetsch.*

onyx CHEMICALS FOR DYEING AND FINISHING

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In Canada: Onyx Oil & Chemical Co., Ltd
Montreal, Toronto, St. Johns, Que.

For Export: Onyx International
Jersey City 2, N. J.

Questions AND Answers

Electricity Is Not Used For Heating Dye Baths

Technical Editor:

Is there any process used in connection with dyeing in which dye baths are boiled by means of electricity? (9154)

There are no dye kettles or other installations of a similar nature used in piece-goods dyeing and finishing that are heated by electrical current, so far as general practice is concerned. This applies also to the dyeing of packages, beams, skeins, and raw stock.

Dyeing is generally carried out by heating the dye baths with steam. The steam may be introduced either in the form of "live steam" directly into the bath, which is common practice on dye kettles and becks; or the dye bath may be heated by passing it over closed steam coils, located inside or outside the dyeing machine itself. If outside, the heating medium may be in the form of a heat exchanger, whereby the dye liquor is circulated through the heating unit by means of pumps.

Generally, most dye plants consider heat obtained from electricity as being somewhat more expensive than that obtained from steam. This fact may account for electrical heating not being commonly found in dye plants.

Plain or Leno Weave Suitable For Making Nets

Technical Editor:

I would like to have the following information relative to weaving laundry nets: the type of loom used, width of the loom, picks per minute, warp and filling construction, and any other information pertinent to this subject. (9153)

Although most laundry nets have been made of cotton yarns in the past, they are now being woven of nylon and other kinds of plastics. Although making nets of these materials is still in an experimental stage, results so far are proving satisfactory.

The type of loom to use depends

Rayon Reports

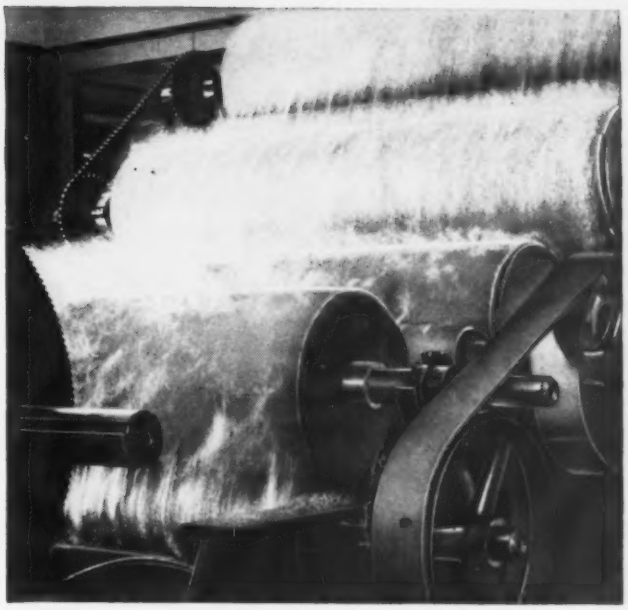
Issued Monthly by American Viscose Corporation, New York, N. Y.

Benefits of Rayon Staple to Woolen and Worsted Industries Reviewed

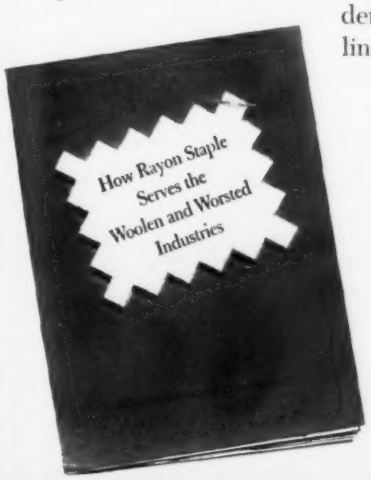
In a new booklet, "How Rayon Staple Serves the Woolen and Worsted Industries," the unique advantages that rayon staple brings to finished woolen and worsted blended fabrics are presented.

The booklet summarizes the economic advantages of rayon staple over rayon waste and garnets, then goes on to review several of the features of rayon staple that make it one of wool's best allies. Of major significance, the booklet points out, is the improvement of blends through the controlled characteristics of rayon staple.

The desirability of using rayon staple of varied lengths closely resembling the varied lengths of the specific wool to be blended is cited. The specific advantages that result from selecting rayon staple of specific deniers for blends are outlined, as is the correct usage of bright and dull luster fibers. The booklet also contains information on how to achieve new tones and effects through rayon's controlled color and dye affinity. In addition, it discusses other factors dealing with rayon staple's advantages in manufacturing economics. Copies of this interesting and comprehensive review are available without charge. Requests should be addressed to American Viscose Corporation, 350 Fifth Ave., New York 1, N. Y.



Shown above is one of the full-size textile machines installed in the Textile Research Department of the American Viscose Corporation. An important part of this department's work is the study of better techniques for blending wool with rayon staple, often in cooperation with woolen and worsted manufacturers.



RAYON 20 YEARS AGO

New York manufacturers have turned to beautiful new fabrics of rayon and cotton to successfully reawaken a demand for housefrocks.

Rayon is to have a still wider use in men's underwear, if cable reports from Paris are correct. Men's fashion arbiters there have decreed that henceforth men's undergarments must be more decorative.

Instructions to laundry workers as to the kinds of rayon fabrics they will be called upon to handle, and the best way of so doing, is urged by the Laundryowner's National Association Fellowship of the Mellon Institute.

MAKE USE OF 4-PLY SERVICE

To encourage continued improvement in rayon fabrics, American Viscose Corporation conducts research and offers technical service in these fields:

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2 FABRIC DESIGN
3 FABRIC PRODUCTION
4 FABRIC FINISHING

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Plants at: Marcus Hook, Pa.; Roanoke Va.; Lewistown, Pa.; Nitro, W. Va.; Parkersburg, W. Va.; Meadville, Pa.; Front Royal, Va.

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with STANLEY MAGIC DOORS

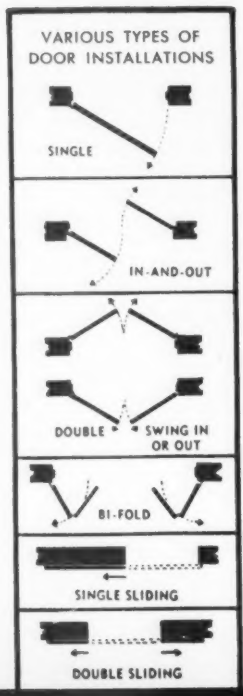
THE "ELECTRIC EYE" gives the go-ahead and Magic Doors open automatically when approached by busy workers or loaded trucks. After passage, the doors close promptly.

You'll recognize these advantages: speeded traffic . . . saving time . . . conservation of heat, humidity, or air-conditioning . . . less door damage.

Stanley Magic Door operating efficiency is proved by years of trouble-free operation, surprisingly versatile in operating swing or slide doors or a combination of the two, and is designed to suit most requirements of space or location.

Your present doors can be suitably equipped. Write today for descriptive folder. The Stanley Works, Magic Door Division, 207 Lake Street, New Britain, Connecticut.

STANLEY
Trade Mark



STANLEY MAGIC DOORS
Require No Hand to Open

upon the kind of material and weave you choose. A plain 1 up-1 down weave, with 10 to 12 picks and 10 to 12 ends per inch of 8-ply cotton cord is one of the weaves most commonly used. A net made in this manner is usually woven in tube form to eliminate seams that would cause friction and wear in the laundry tubs. The nets are usually about 24 in. wide and 36 in. long. A 4-harness-cam, single-shuttle loom 36 in. or more wide would be suitable. Weaving speed should be from 80 to 100 picks per minute. Looms used to weave burlap bags would be very well suited for this work.

A leno weave, which permits larger spaces between the woven yarns, is also used for making nets. To use this weave, a special set of doup harnesses is necessary and the loom must be equipped for crossing one warp end over the adjacent warp end each time a filling pick is inserted. This weave gives the fabric a firm structure.

Horsepower Per Spindle Figured From Formula

Technical Editor:

In January, 1945, you published an article by A. N. Sheldon and J. J. Blake on "Interrelation of Ring, Bobbin, and Spindle Speed," which contains on page 109 a formula for calculating horsepower per spindle on ring frames.

I have tried to use this formula to ascertain or check horsepower requirements, but in no instance did the result come anywhere near the facts. It appears that in the formula no consideration is taken of such items as weight on spindles (as related to lift), weight of spindles (all metal or wooden top), type of spindle drive (tape or band), length of machine (obviously the hp. per spindle will be higher for a shorter frame), and type of yarn spun (filling or twist or even crepe).

Since it is stated that the formula has been used to compute power costs, I would be very grateful for some elucidation because I am anxious to obtain a workable formula (915)

In the formula (at the top of page 109 of the January, 1945, issue of TEXTILE WORLD) the last item on the right-hand side of the equation, namely:

$$\frac{(\text{Rev})^{1.808}}{(1000)}$$

is raised as an entity to the 1.808 power. Using the formula as printed above, you no doubt applied the exponent to the number of revolutions only.

However, at a later date this formula was revised as follows, which

(Continued on page 188)

Yes, she can tell you that one of a woman's first guideposts to a glamorous costume is not style alone—but the eye-appeal of fabric itself. And *so much* depends on whether or not the fabric has been properly processed.

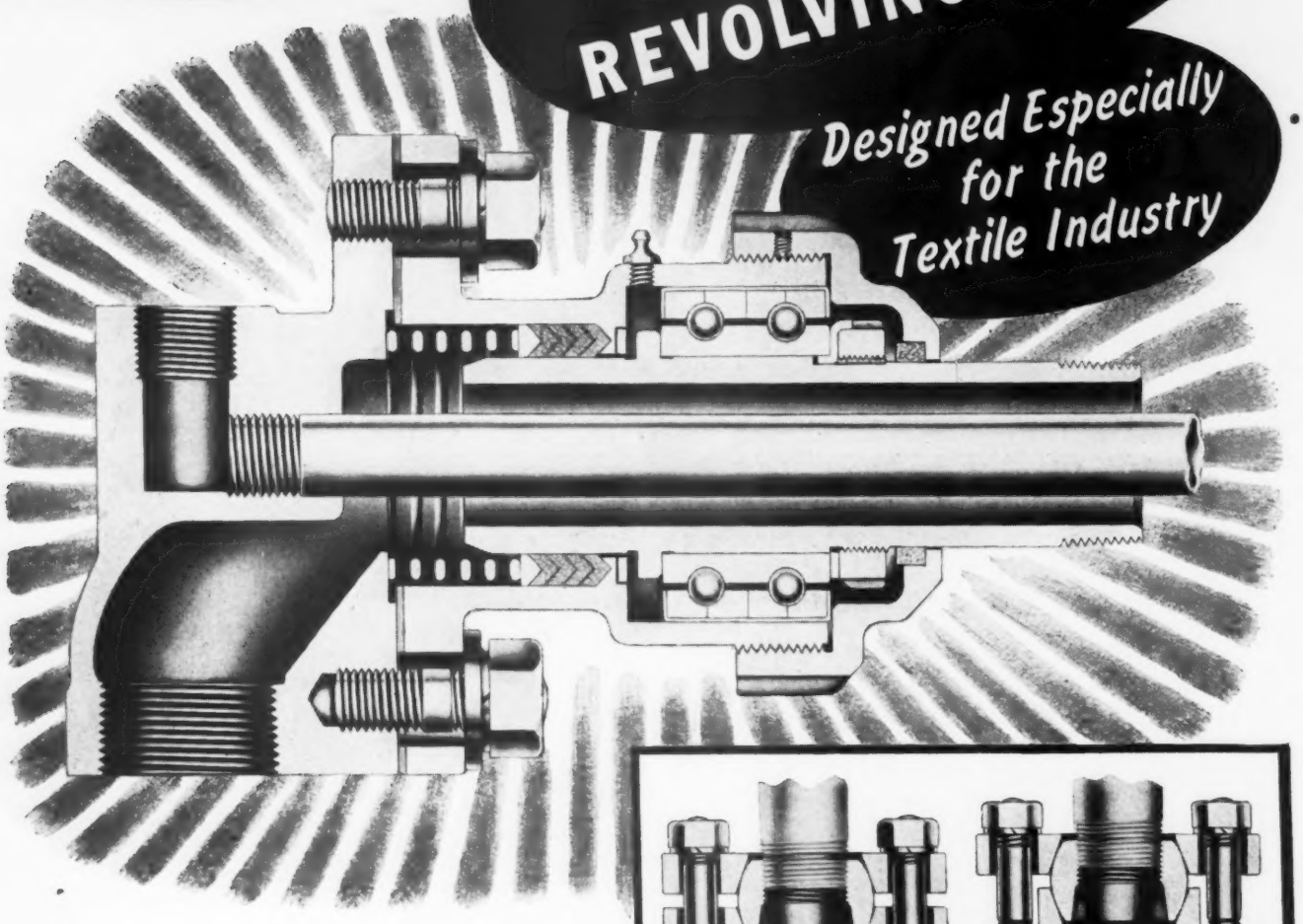
That explains why so many of America's leading mills, converters, finishers and dyers have turned to Colgate-Palmolive-Peet for high-quality wetting, fulling, scouring and dispersing agents.

Remember, there is a C.P.P. soap or synthetic detergent for every type of fabric—for every processing problem. Ask your local Colgate-Palmolive-Peet representative for details. Or, write to Industrial Department, Colgate-Palmolive-Peet Company.

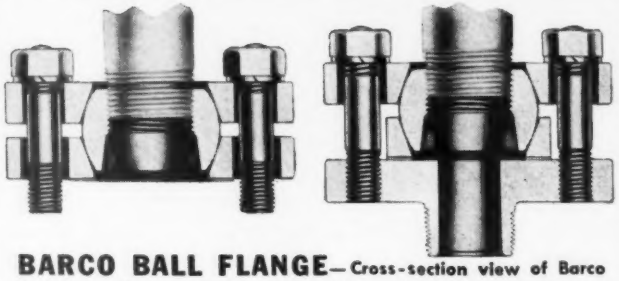
Colgate-Palmolive-Peet Co. Jersey City 2, N. J. • Atlanta 3, Ga. • Chicago 11, Ill. • Kansas City 3, Kans. • Berkeley 2, Calif.

REDUCE MAINTENANCE OVERHEAD WITH THE BARCO REVOLVING JOINT

Designed Especially for the Textile Industry



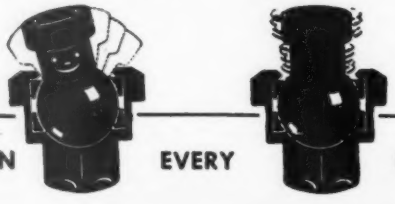
One way to eliminate a lot of maintenance worries and guard against steam leaks is to install this Barco Revolving Joint in slashers, dry cans, callenders and sanforizers. Barco reduces power costs because it has a lower turning torque. Installations in textile weaving and finishing plants or bleacheries have been particularly successful. Write for further information to Barco Manufacturing Co., Not Inc., 1834 Winnemac Avenue, Chicago 40, Ill.



BARCO BALL FLANGE—Cross-section view of Barco Ball Flange for use on threaded and flanged rolls for correcting roll misalignment. Sleeve can rotate concentric even though threads on roll are tapped off center.

BARCO FLEXIBLE JOINTS

Not just a swivel joint ...but a combination of a swivel and ball joint with rotary motion and responsive movement through every angle.



FREE ENTERPRISE—THE CORNERSTONE OF AMERICAN PROSPERITY

In Canada: The Holden Co., Ltd., Montreal, Canada.

"MOVE IN EVERY DIRECTION"

MANUFACTURERS' BULLETINS

***READERS** may secure copies of literature reviewed on these pages by using the post cards below. Fill out COMPLETELY one coupon for each piece wanted.*

Free FOR THE ASKING

1. Model MJ knitting-machine parts catalog has been published by Supreme Knitting Machine Co., Inc. The catalog gives a complete index of the Model MJ and provides information concerning construction and machine systems.

2. Flame cutting of steel plate to produce plain or intricate shapes is described in a 4-page illustrated bulletin issued by Joseph T. Ryerson & Son, Inc. A number of typical flame-cut sections are shown; information is given regarding the use of irregular-shaped steel plates in both production and maintenance work.

3. "Heat Operations in the Plastics Industry" is the title of a 5-page folder published by J. O. Ross Engineering Corp. The article explains the application of heat in molding, extrusion, casting, laminating, coating, impregnating, and in the application of adhesives.

4. The importance of feedwater control, water-conditioning chemicals and equipment, obtaining samples for test, test procedure, and handy reference tables to assist in reporting results are subjects followed in a 12-page booklet published by Allis-Chalmers Mfg. Co. The booklet is written for the guidance of power-plant operators.

5. Corrosion-resistant fans for exhausting acid and other corrosive fumes are described, and engineering data including dimensions and capacities of five standard sizes of fans are given in a 12-page bulletin issued by the Duriron Co., Inc. The bulletin describes the special corrosion-resisting alloys of which the fans can be built, gives typical applications for the fans, gives information on the types of drives used, and provides complete instructions on how to specify fans for particular applications.

6. "Control Instruments for Textile Processes" is the title of Catalog 9305 published by The Brown Instrument Co. The catalog describes, pictures, and gives general specifications and diagrams of such instruments as slasher-control systems, size-level and temperature controls, cylinder-temperature controls, moisture-content controls, continuous-bleach controls, dyeing and drying controls, kier-boiling control, pH control, and size-cooking and storage control.

7. An all-purpose conveyor for assembly, inspection, and packing operations is described in a two-color, eight-page bulletin, No. PF-8, published by Island Equipment Corp.

8. Hydraulic-type packaged-power units are described in a 16-page book, No. 2085, issued by Link-Belt Co. The book describes the advantages of the drive in eliminating peak starting loads and preventing damage to power-driven equipment, gives performance curves, and lists equipment to which the drive may be applied.

9. Revolving joints for use in supplying steam, gas, or other fluids from a fixed or stationary supply pipe to a rotating drum or member are described in Catalog 295, published by Barco Manufacturing Co. The catalog explains how the joints can be adjusted in all directions when used with adjustable-ball flanges to compensate for roll misalignment and piping strains, eliminating extra wear by permitting free rotation of the sleeve.

10. Industrial products of Sun Oil Co., including cutting oils, textile processing oils, general lubricants, refrigeration oils, solvents, greases, and waxes, are described in a 4-page folder issued by Sun Oil Co.

11. Hose masks and auxiliary equipment designed to safeguard workmen where high concentrations of gas or insufficient quantities of oxygen exist are described in a 6-page bulletin, No. EB-5, published by Mine Safety Appliances Co. The bulletin includes complete information on single- and double-tube masks and describes hand- and motor-operated air blowers.

12. Roller-bearing spindles for cotton spinning frames and twisters and for rayon and nylon twisters are described and illustrated in an 8-page booklet published by Marquette Metal Products Co. Cutaway views of the spindles illustrate the interior features; a spindle equipped with an adapter for paper tubes is illustrated in addition to the more common types.

13. "Armeen Salts" is the title of a 4-page technical bulletin, published by Armour & Co., which discusses the aliphatic amine salts and their use as penetration assistants and water repellents.

14. "Vapor Saving Roofs" is the title of an 8-page bulletin issued by Graver Tank & Mfg. Co., Inc. Expansion roofs and floating-type roofs of double-deck construction are described; information on

Instructions for use of post cards on other side

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the conservation of petroleum products in storage is given.

15. Industrial protective clothing and its functions in industry are described in a 10-page booklet published by The B. F. Goodrich Co. The bulletin describes and pictures work coats, fire-fighters' coats, policemen's coats, corrosive-resistant work aprons, acid-proof aprons, laboratory aprons, and other types.

16. Precision tools, machines, and instruments are illustrated and described in a 96-page catalog published by George Scherr Co., Inc. The catalog includes laboratory instruments, machine tools, machinists' tools, measuring instruments, optical equipment, toolroom specialties, and transmission equipment; it also devotes space to examples of the type of work which can be handled with some of the instruments and tools.

17. Industrial infra-red lamps are described and illustrated, and the four main types of ovens used in employing infra-red lamps industrially are pictured in an illustrated folder, Y-689, published by General Electric Co. The folder points out many of the uses to which infra-red lamps are now being put, and enumerates six of the advantages of using the lamps.

18. Cutting stainless and alloy steels by the Oxyarc process is described in a 4-page folder published by Arcos Corp. The folder enumerates the advantages of using the combination of a-c or d-c welder and bottled oxygen in cutting a wide variety of metals.

19. Positive-displacement meters, their construction features, advantages, sizes, and capacities, are the subject of Bulletin 40-B-14 issued by Roots-Connersville Blower Corp. The bulletin gives installation views, sectional drawings, proof curves of meter tests, and discusses special applications such as laboratory testing and others.

20. Kayloom, a new combination knitting and weaving loom is described and a wide variety of fabrics which it will manufacture are listed in a pamphlet published by Robert Reiner, Inc.

21. Industrial trucks and cranes, for electric or gas-electric power, including low-lift trucks with or without crane units, high-lift platform trucks, fork-type trucks, cranes, stationary-bed load carriers, and tractors, are described and illustrated in a catalog published by Elwell-Parker Electric Co. Included in the catalog are fork-type trucks equipped with modern interchangeable devices and high-lift platform trucks with capacities up to 50,000 lb.

22. Care of Roto-Coners is the subject of a 12-page booklet published by Universal Winding Co., entitled "How to Keep Your Roto-Coners Healthy and Happy." Sections of the booklet cover lubrication, cleaning, checking for wear, care of belts, adjustments, what to check first in case of trouble, and hints for operation.

23. A separable-socket industrial thermometer available in angle- and straight-stem types with heavy armor protection to resist corrosion and dirt is described in Bulletin 55 issued by Accuracy Scientific Instrument Co.

24. "Emulsions" is the title of a 72-page book, published by Carbide and Carbon Chemicals Corp., which contains 113 formulas and methods for preparing emulsions of oils, waxes, fats, and greases. The book describes the uses of Tergitol wetting agents, Carbowax polyethylene glycol emollients, Cellosize hydroxethyl cellulose thickener, amine soaps, and catoionic dispersants.

25. Reducing floor-maintenance costs through the use of Emeri-Crete flooring is the subject of a new bulletin released by Walter Maguire Co., Inc. The bulletin gives test data on installations and a list of industries where Emeri-Crete has been used to advantage.

26. Vulcalock-lined pipes and fittings are the subject of catalog No. 9780 published by The B. F. Goodrich Co. Descriptions of the linings, their functions, and their characteristics when applied to wrought-steel materials, wrought iron, cast iron, and spiral-welded pipe are given.

27. Corrosion-resisting equipment, including pumps, valves, fittings, tubes, ejectors, tanks, kettles, fans, sinks, bowls, and other equipment, are described in a 20-page general catalog published by The Duriron Co.

28. Importance of fire hose in combatting the rising trend of losses by fire in the United States is the subject of a folder published by The B. F. Goodrich Co.

29. Filters of various types are described in two bulletins published by Liquid Conditioning Corp. Bulletin 1 outlines many types of clarifying filters, and Bulletin 3 describes oil-removal filters recently placed on the market by this company.

30. Construction Data and Handbook, giving compact technical data on flooring materials, exterior and interior coatings, roofing materials, waterproofings, dampproofings, and admixtures, has been published by A. C. Horn Co., Inc.

31. Hydraulic pallet lift trucks are described in a new bulletin published by Lyon-Raymond Corp. Illustrations showing method of operation with pallets, recommended pallet construction, and adaptability of various materials to palletizing are given.

32. Skullgards for protection against all head hazards encountered in industry are described and illustrated in Bulletin No. DK-13, published by Mine Safety Appliances Co.

33. Fiber Bonded processes are described, illustrations of the newest models of machinery are shown, and verbatim copies of the patents and the license agreement are given in a 32-page booklet published by Dan River Mills, Inc., Research Engineering Division.

TO GET MORE INFORMATION

1. Fill out completely *one space* (name, title, company, address, and item number) for *each* bulletin wanted. Put only one number in each square.

2. Use only bottom card if ordering one to four pieces, both cards if ordering five to eight.

3. Detach, add postage, and mail.

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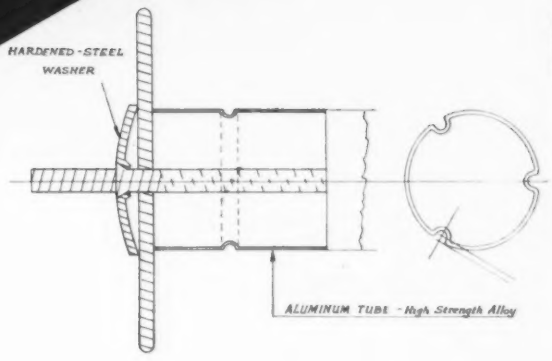
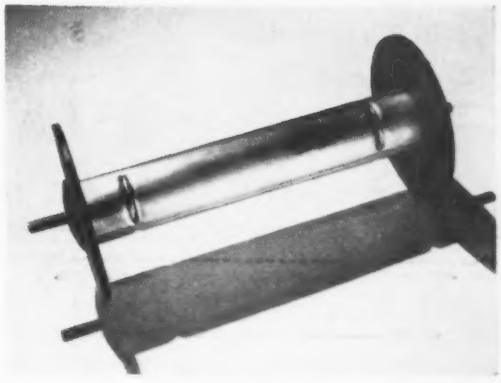
a New HIGH in JACK OR DRESSER SPOOL ENGINEERING

MUCH LIGHTER MUCH STRONGER





Made of high-strength alloyed aluminum tubing the New Lestershire Jack or Dresser Spool reaches a new high in engineering features.

This lighter, stronger spool is made with not one but *three* "slasher grooves" in the aluminum barrel, serving not only as an extra ready means for cutting off the yarn, but also strengthens the barrel longitudinally and horizontally. This new patent-applied-for barrel offers far more strength against bending or denting. Yarn slippage is reduced. The spool is lighter than wooden spools and, of course, cannot be damaged as can a wooden spool when the yarn is cut off.

Send us your specifications for a free sample today.

OTHER ADVANTAGES

★ Triple slasher grooved barrels are practically indestructible.

★ Rust proof and slip resistant.

★ Constructed with durable fibre heads and reinforced with hardened steel washers (see working sketch above).

★ Position of slasher grooves marked on inside each head.

PRECISION SPECIAL PURPOSE BOBBINS

W. S. TAYLOR, INC., 52 Vanderbilt Avenue, New York 17, N. Y.

NEW YORK SALES AGENT AND TECHNICAL SERVICE

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ODELL MILL SUPPLY CO., Greensboro, N. C.

GREENVILLE TEXTILE SUPPLY CO., Greenville, S. C.

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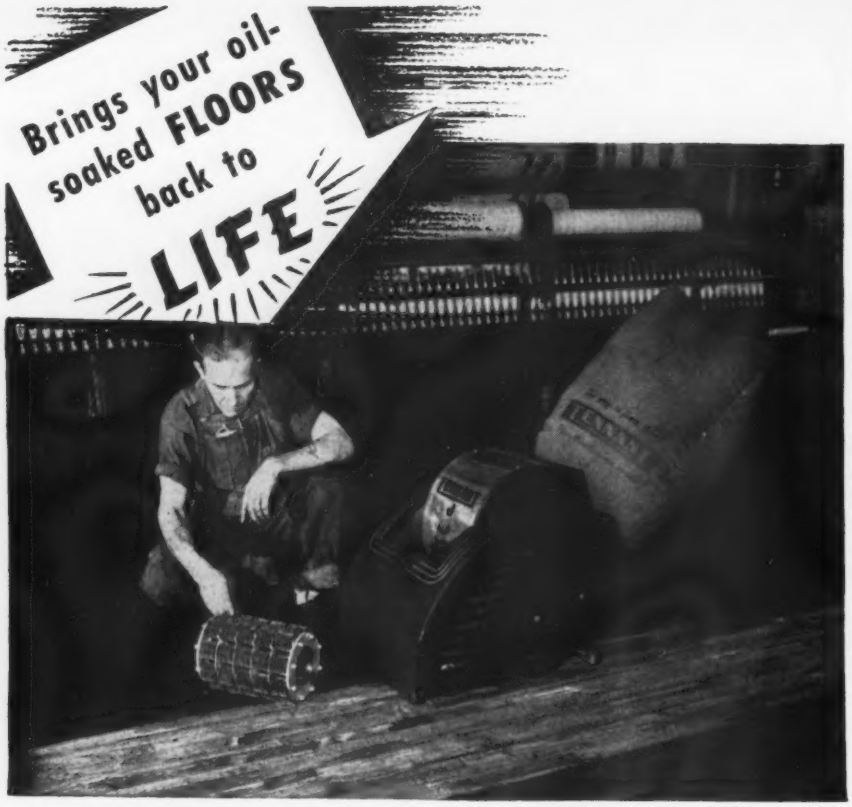

TENNANT System DRY CLEANING

FOR MILL FLOOR MAINTENANCE

Reconditioning dark, slippery, oil-soaked floors with the Tennant System *increased light reflection* 533% in the mill shown above.

You, too, can bring your old, slippery, oil-soaked floors back to life again—and *keep* them "like new" for years—with the Tennant System of Mill Floor Maintenance.

Clean, dry, hard floors—maintained by *dry cleaning*—increase your mill's efficiency. They improve working conditions, boost employee morale and promote safety.

THE TENNANT SYSTEM DOES THIS:

RECONDITIONS worn, oily surfaces. Removes soft, dingy topwood fibers and leaves a sound, vigorous floor surface.

HARDENS and seals to resist wear. Quick-drying Tennant seal is rapidly burnished into the floor to fill, bind and HARDEN into a glossy, non-slippery, wear-resistant surface.

DRY CLEANS—eliminates scrubbing. Cleans, smooths and brightens your floor many times faster than scrubbing. Daily cleaning is easy with treated cloth mop.

WRITE today for Bulletin on Mill Floor Maintenance.

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Oil Cover Paint

Paints over oil and dries in ½ hour! Tennant 201 Oil Cover Paint brightens hard-to-get-at floors under looms, spinning frames, etc. Provides attractive, easy-to-clean finish. Available in many colors.

(*Continued from page 182*)

gives a slightly different result from the previous formula:

$$\text{Hp./Spindle} = \frac{.0003055}{4.75} \times R^{1.42} \times \frac{\text{Rpm.}}{(1000)}\,\frac{2.04}{\sqrt{S}}$$

If you will refer to TEXTILE WORLD, September, 1943, pages 98 and 99, you will find this formula and the number of spindles per hp. worked out in several different examples.

Unbalanced Twill Is Best for Suede

Technical Editor:

We are considering weaving 16-oz. suede from 3¼-run virgin-wool yarn, 26 picks. Is the 2x1 chain twill preferable to the 2x2 8-harness twill? (9149)

A suede can be woven in a 2x1 or a 2x2 twill, depending on the type of fabric desired. A 2x2 twill will give a balanced fabric, warp and filling, but may show the weave in finishing. A 2 up-1 down or 3 up-1 down weave will yield an unbalanced fabric, but the cloth will have a smooth appearance on the face.

In making suede, the finishing is much more important than the weaving, as this type of cloth must be fulled, napped, and sheared very carefully.

Slipping of Weaver's Knot May Be Due to Short Tail

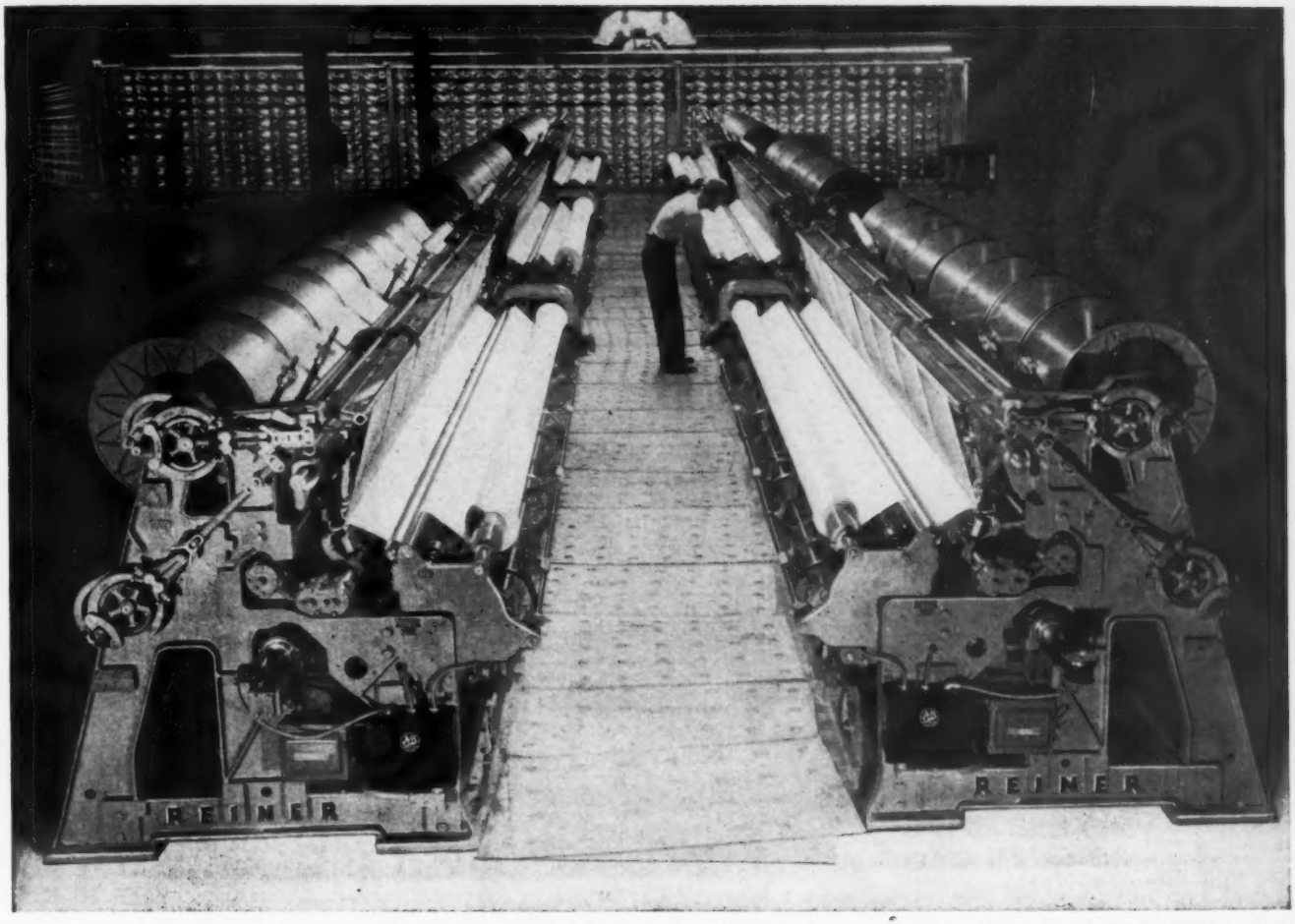
Technical Editor:

We are weaving heavy tubular fabric, and the warp used in this work runs about 660 yards to the pound. We require a great deal of tension because we must pack our product in tightly. Our problem is this: When knots come up from our creel and loop over the various tension bars that we have, they invariably open up and cause a broken warp and stoppage of the machine. We tie our warp with a regular weaver's knot and clip our loose ends as close as possible.

Is there some liquid, soap, or wax that we can use to rub on the yarn when a knot has been made and perhaps create a slippery surface so that the knot can smoothly slide over the tension bars and at the same time serve the purpose of holding the knot together? (9150)

Your trouble may be caused by the ends of the knot being too short. When tying a knot in hard-twist cotton yarn where there is going to be a large amount of tension, it is advisable to leave a long tail on the knot. All knots slip slightly before they tighten; and if the ends are not long enough,

IT PAYS TO USE REINER MACHINES



Installation of Reiner high speed Tricot Machine (RT-1) and Magazine Creel at Ko-Nit Mills, Englewood, N. J.

Fabric Quality • Speed • Steady, even flow of production • Ease of operation • Economical maintenance • An almost unlimited pattern range — truly, these are elements of profitable production found in every Reiner unit and proved by actual production performance in knitting mills everywhere.

The new Reiner High Speed Tricot Machine has a cruising speed in excess of 450 courses per minute, with a knitting width of 168 inches (or 84 inches with still higher speeds). It takes 21 inch spools or any spools of the conventional size. It can be operated with either a pattern wheel or a chain link drive, the change-over being merely a matter of minutes. This gives the knitter a still wider selective pattern range of one bar or two bar tricot fabrics of rayon, nylon, silk, cotton, wool, etc., single-fibre or blended yarns.

Reiner also offers a full line of preparatory equipment such as creels and warpers for all requirements, warping spools, hydraulic beam lift wagons, stop motion equipment, and other auxiliary items, thus giving the knitter a continuous line from start to finish, all available from one source.

IT PAYS TO USE REINER MACHINES

"The proof of the pudding is in the eating". Ask anyone of the leading knitting mills now using Reiner equipment. Richly illustrated catalogs are available upon request.

See us at the Knitting Arts Exhibition, Atlantic City, Booths 230-239

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10 MINUTES FROM TIMES SQUARE. Take Bus Nos. 61, 67, 167 from the Times Square Public Service Terminal at 260 West 42nd Street, New York City. Get off at Pleasant Avenue, Weehawken, New Jersey. From there turn left and walk through the underpass up to Gregory Avenue . . . . . TELEPHONE: UNION 7-0502, 0503, 0504, and 0505.

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BALONEY! THERE'S MORE REAL THINKING DONE TODAY THAN THERE EVER WAS!
WHAT HAVE YOU GOT TO THINK ABOUT? YOUR MACHINE'S AUTOMATIC-- ART, MUSIC, MACHINERY, LITERATURE, EVERYTHING YOU MIGHT THINK ABOUT HAS ALL BEEN FIGURED OUT FER YOU-- JUST GIVE ME A NEW IDEE, JUST ONE THAT YOU CAN'T FIND IN A BOOK! WHY, THIS GENERATION IS NOTHING BUT PARROTS!
A NEW IDEE, HE SAYS! HE'S SPREADIN' ONE AROUND NOW-- SOL-SPEEDI-DRI! WELL, HE'S PART RIGHT AT THAT-- SOL-SPEEDI-DRI IS AUTO-MATIC!
J.R.WILLIAMS
T. M. REG. U. S. PAT. OFF.
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IDEA MEN

SOL-SPEEDI-DRI . . . the granular, oil-thirsty absorbent . . . is the automatic, modern method of floor-maintenance. One man to spread it around over film-slick floors . . . the same man to sweep it up with an ordinary, stiff broom. It's that simple! The results? When SOL-SPEEDI-DRI is on the floors, you've got a magic carpet of safety underfoot . . . no slipping, no falling. And when SOL-SPEEDI-DRI is swept up, it takes with it dangerous, unsightly oil- and grease-deposits, making your floors home-clean.

Yes, SOL-SPEEDI-DRI is modern because it doesn't require trained personnel . . . or expensive machinery . . . for its use. It's modern because it points to economy, to safety, in any shop. SOL-SPEEDI-DRI reduces accidents caused by falling and slipping. It keeps machines going, by keeping men at work . . . in safety. It reduces fire-hazards, for SOL-SPEEDI-DRI will not readily burn, even when oil-soaked!

SUPPLIERS: *East*—Safety & Maintenance Co., Inc., No. 1 Wall St., New York 5, N. Y. *South, Midwest & West Coast*—Waverly Petroleum Products Co., Drexel Bldg., Phila. 6, Pa.

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OIL AND GREASE ABSORBENT
UL
Get the full story of SOL-SPEEDI-DRI today. Just write "SOL-SPEEDI-DRI" on your letterhead or business card for complete details and a free, generous sample.

a knot may open up and slip. Do not cut the ends close until the yarn is in the loom and the tension bars have had a chance to tighten the knot. A single weaver's knot should give good results.

Wetting the yarn before a knot is tied will soften the yarn and help to prevent slipping.

A size made of hot water and starch with a little animal glue added will help, but a method of drying the warp yarn will be necessary.

Some mills have found it helpful also, to have a large block of paraffin wax resting on the warp ends, so that the yarn is lightly waxed to help it slide over the rolls.

American System Produces Various Worsted Yarns

Technical Editor:

We are interested in getting the following information in regard to worsted spinning on the cotton system:

1. Are the short-staple tops available in 60/64 quality for drawing and spinning, or is it necessary to use cut tops and card them before drawing?

2. What equipment is necessary to cut the top into short staple?

3. In view of the fact that there are less operations in the drawing, is it possible to spin an even yarn with soft twist in numbers such as 20/1 or 20/2?

4. Are there any firms spinning worsted yarn on the cotton system that is suitable for knitting?

5. Do you know of any knitters using this type of yarn for: (a) knitted outer wear from approximately 20/2 count on Philadelphia jacquard links-and-links machines, and (b) knitted fabric on latch-needle or spring-needle machines in counts of 20s to 28s? (9152)

1. Short-staple tops in 60's and 64's quality are available and if a worsted yarn is to be produced, cut tops are not recommended. Presently supplied tops up to 3-in. staple can be processed. It is very likely that special machines will be built in the near future that will be able to accommodate longer-staple tops. Cut tops are used mainly when the wool is to be blended with rayon staple or other synthetics.

2. Only a fiber-cutting machine is needed for cutting the top into short staple. Machines for this purpose are manufactured by a number of firms.

3. A suitable yarn can be produced on this system in counts of 20/1 or 20/2.

4. Worsted yarns suitable for knitting and weaving are being spun on the American system.

5. We have not seen any of this yarn in knitted fabrics other than socks and children's wear.

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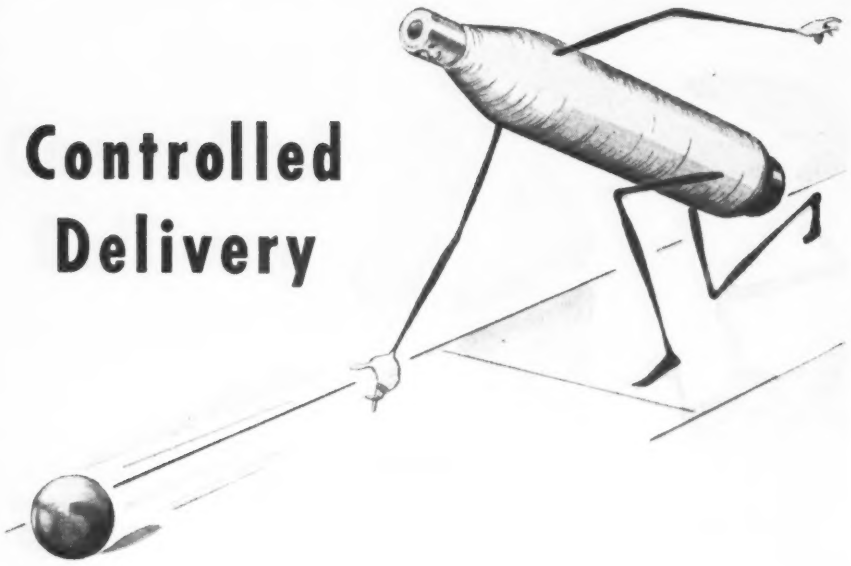

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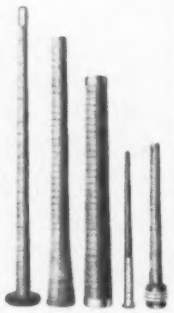

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Spinning Refinements

(*Continued from page 135*)

OILING SPINDLES. Several practices for oiling spinning spindles were reported. One mill, spinning yarns ranging from 3s to 16s, uses spindle bolsters without snouts for receiving oil without the spindle being raised. Once a month the frames are stopped, the spindles lifted in the bolsters, and oil added. Once each 18 mo., at the overhauling period, the spindles and bolsters are removed from the frame and washed in a cleaning solvent.

Spindles are oiled once a week at Fairfax Mill, West Point Mfg. Co., it was reported. At the overhauling period, the oil in the bolsters is removed by suction and new oil is applied.

Another mill reported that it never takes spindles out of the bolsters and never washes the spindles or bolsters. At the end of each 3-mo. period, the spindles are raised; and new oil is added until the old oil comes out of the bolsters.

A duct system of air changing has been in use at Fairfax Mill since 1940. A relative humidity of 55% is maintained. Results, in comparison with conditions previous to installing the system, were said to be less sooty yarn but more accumulation of waste overhead. It has been necessary to increase the amount of overhead blowing.

Two other mills that use duct systems of air changing also reported more flying lint, which settled overhead and on the yarn.

PERFORATED COTS. In answer to the question on the advantages of using perforated synthetic cots for covering spinning rolls, one mill, spinning 8s to 20s yarn, reported that it has found that these cots reduce eyebrowing. Another mill installed one frame of perforated synthetic cots, ran them two months, and discarded them because of the excessive amount of lapups.

It was pointed out by L. D. Savers, Mount Vernon-Woodberry Mills, Tallassee, Ala., that perforated rolls used in conjunction with revolving clearers were satisfactory. Used with flat clearers, the rolls keep the clearer waste pushed to the back of the clearers.

Cowikee Mills, Eufaula, Ala., found that perforated rolls reduced eyebrowing when used with flat clearers, J. M. Jordan, superindentent, reported. However, no benefit was noted when the rolls were used with revolving clearers.

It was almost unanimously agreed that the only way to eliminate eyebrowing is to use revolving clearers.

There was considerable agreement

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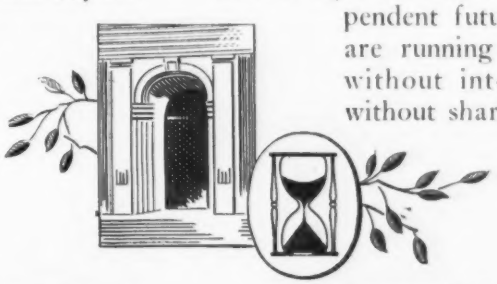

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also that synthetic aprons will give longer service than leather aprons on long-draft systems on which short aprons are used. It was generally conceded that on systems which employ long aprons leather aprons are more satisfactory.

One mill reported that the life of its short leather aprons is approximately 12,000 hours, while the life of its short synthetic aprons is approximately 17,000 hours. This increase in operating life, it was pointed out, corresponds roughly with the increase in cost of synthetic aprons over leather aprons.

NON-SLOUGHING CAMS. Non-sloughing cams, described as controlling the stroke of spinning frames, so that the upward speed of the rails is three times as great as the downward speed when used on a combination wind, were said by one mill to be successful on its filling yarns. The average number of the filling yarns spun by this mill was 11s.

These cams have resulted in more yarn on spinning bobbins and less waste at the Barber-Colman spooler, running at 1,200 yd. per min., at Dallas Mfg. Co., Huntsville, Ala., it was said. The average yarn number was reported to be 22.50s, wound with a combination wind on 9½-in. bobbins on frames equipped with 2¼-in. rings.

Data given by another mill using the cams were as follows: lb. per frame per doff, 32 to 40; spinning frames run approximately 1½ hr. longer per doff; and bobbins run ¾ min. longer on the spooler.

Speeds and doffing schedules were not changed at Mount Vernon-Woodberry Mills when non-sloughing cams were installed, Mr. Sayers reported. Using a combination wind with these cams, the mill has fewer ends down and is able to salvage more bobbins of bad work. Spooler speeds range as follows: 7s to 10s yarn, 925 yd. per min.; 10s to 13.50s, 1,025 yd. per min.; above 13.50s, 1,125 yd. per min.

Frames are overhauled at Fairfax Mill every three years, it was said. At that time, all worn parts are replaced; and spindles, bolsters, and other moving parts are inspected by the second hand. Bolsters last from 15 to 18 yr. The mill operates frames with 2¼-in. rings and 7-in. traverses and frames with 2½-in. rings and 8-in. traverses at an average spindle speed of 8,500 rpm.

Another mill reported that its frames are overhauled once a year. Between overhauling periods, each section man checks one frame each day and gives a report on it to the second hand. Bolster life at this mill was said to be from 10 to 12 yr.

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Box Binders

(*Continued from page* 125)

When the binder curve is too far front, the shuttle also may be thrown erratically and may bounce across the race. It will often slap the box front and cause a bang-off.

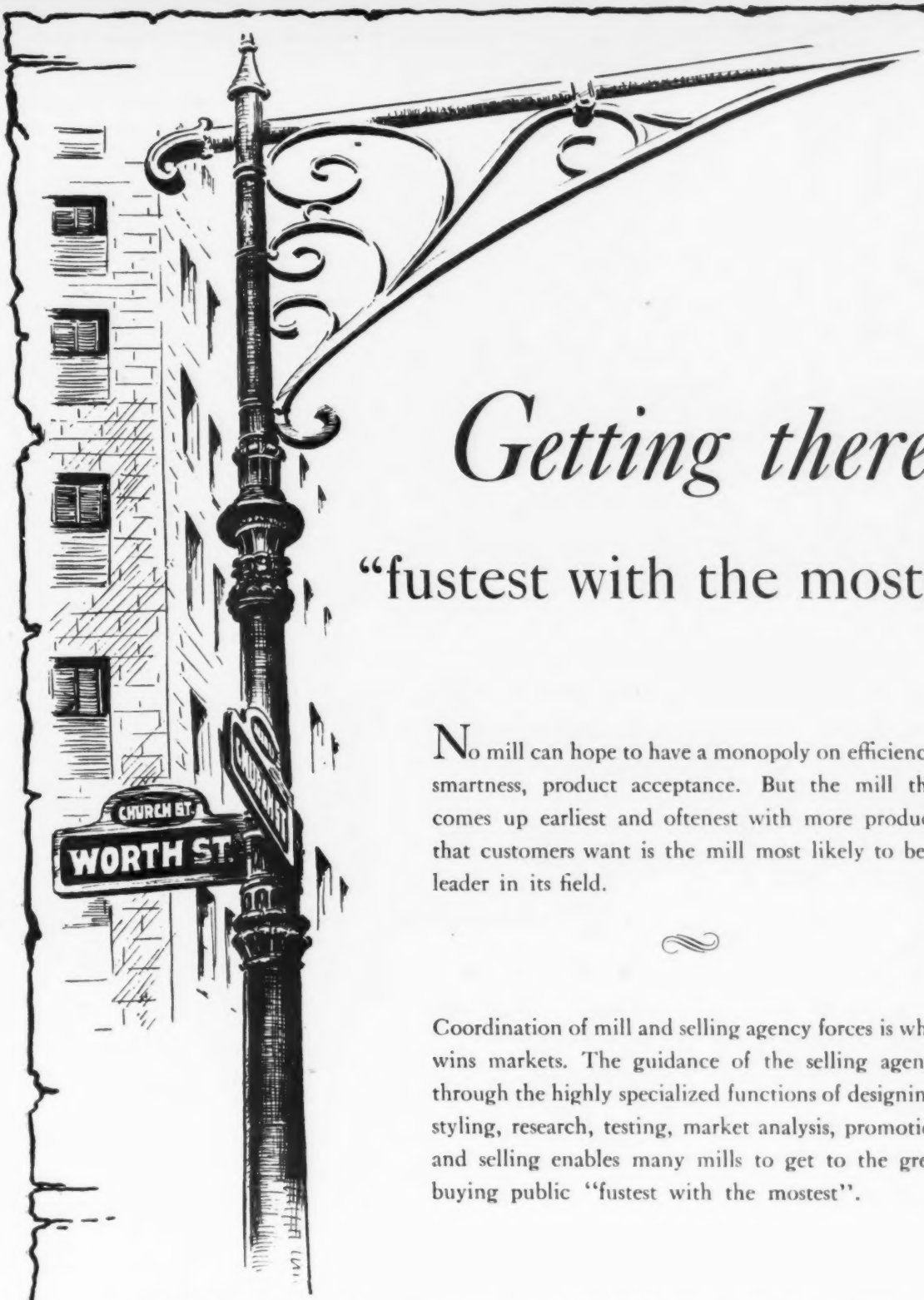
If the loom bangs off on the right side with the shuttle nearly all the way in the box, also inspect the right-side binder, as the bends may be too far back. When the binder has insufficient lift for the protector rod, a bang-off may occur, as the shuttle causes the protector rod to bounce, and the dagger nips the knock-off lever for the bang-off.

In Fig. 1, three different binder shapes are shown: *A* is the bend toward the back which has proved an excellent shape, *B* is the bend toward the front, and *C* is a stream-lined bend which some millmen prefer. Regardless of whether the binder is positioned to the front or back of the shuttle box, these three shapes can be used.

WIDE OR NARROW. Occasionally, a fixer must go against his better judgment in the shaping of binders, in order to weave a certain width of cloth. If the cloth width takes in the full reed width possible, there is very little space between the selvages and the shuttle boxes. Should the binder be shaped according to some needs with the bend too far front, or as on the stream-lined shape, and the shuttle snares in the shed, a smash will be made as the shuttle lifts the binder and removes protection while one end of the shuttle is still within the shed.

With a loom set as outlined in the foregoing, there are also occasions when insfficient pick is used in throwing the shuttle across the race, resulting in the shed trapping the shuttle and making small smashes of several hundred ends. It is a better practice to place binders in the box with the bend as far back as possible, so the shuttle will bang-off just as the rear shuttle point clears the shed. This may require a little more pick to get the shuttle across, but production will be increased, as small smash-outs will have been prevented. The closing shed often retards the shuttle's flight sufficiently to prevent a bang-off from an improperly shaped binder.

When weaving narrower fabrics, a quite different condition usually exists. Since there is more space between the edges and shuttle boxes, the binder may have the bend further to the front. In a weave shed constantly changing between narrow and wide widths, two binders should be kept on hand for each loom. Thus, when a change from narrow to wide widths is being made,



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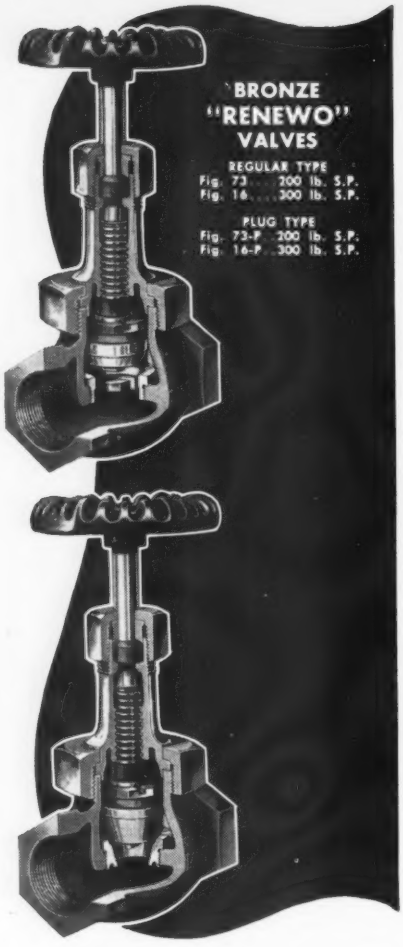

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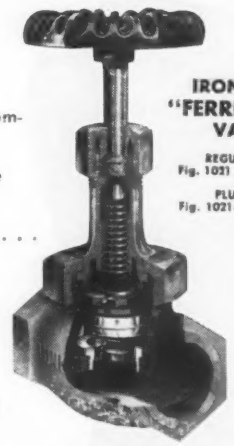

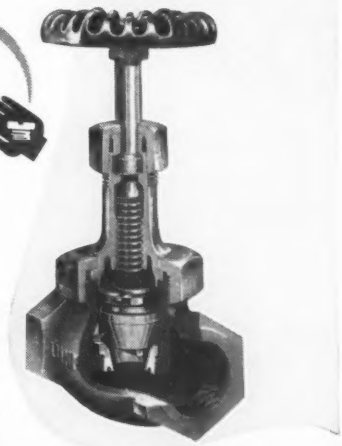

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the binders are also changed. It is important to keep binders marked for individual looms. The loom number can be burned into the wood surface or punched into the metal surface. To use the wrong number will invite trouble, for although all binders may be shaped alike, there may be a slight difference in binder length, hole diameter, and thickness or other dissimilarity between the binders belonging to each loom.

PINS AND HOLES. Binder holes wear as well as the box pins. Since steel pins will wear more rapidly, rawhide or fiber pins are preferred. When placing new shuttle boxes into work or new binders into new or old boxes, a wise plan is to enlarge the holes to take a larger-size pin. When fiber pins are used, the binder holes rarely are enlarged through wear. Fiber pins are exceptionally good on multiple-shuttle boxes. Usually, when new looms or new boxes are installed, the boxes are equipped with steel bolts fastened securely through the holes and binders. Some fixers remove all these bolts and drill the box holes and binder holes to about a $\frac{5}{16}$-in. diameter to take a fiber pin. When wear starts, the fiber pins are cut; and when such wear is noticed, new fiber pins can be placed and future trouble will be prevented.

Keep pins oiled at the binder and box holes only on steel binders. It is not necessary to oil wood binders.

SHORT BINDERS. Sketched in Fig. 2 is the right-hand side of a Draper rayon loom; in it can be seen the wood binder within the shuttle box. This binder is covered with leather. Binders are usually interchangeable on right- or left-hand boxes.

The reason for bringing this loom into discussion is that exceptionally short binders are used on it. Almost all loom settings are made with a gage, and the picking is engineered for a short binder. If there is a slight rebound on checking, or if picking is off, the loom bangs off frequently. Some fixers believe that if the binder were at least 1 in. longer, the loom would function even if pick or check was slightly off. This question, of course, is somewhat related to shaping the bend front or back of center on longer box binders.

When box binders are longer than necessary, slightly less pick must be used, as the shuttle enters the box and starts the movement which moves the protector rod so daggers clear the knock-off lever; and, as previously mentioned, if full-width cloth is woven, this extra length may cause trouble.

LEATHER FACE. The practice of running steel or wood binders without a leather facing is fast becoming obso-

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lete. Most fixers, foremen, and supervisors have been educated to the many advantages of leather facing on binders.

With binders lined with leather, a softer pick can be obtained, less check is often used, and binder-spring tension can be lessened. After all, the better a loom runs, the less a fixer must work and the more production the section turns out.

When new binders are placed into use, make sure that they are properly lined with a leather facing. Place the smoother surface to the outer side. After gluing, stretching, and fastening with rivets or brads, sand the smooth surface slightly with a fine coated abrasive.

There is often a tendency to neglect binders. Perhaps the reason may be that they are partly hidden from view. Inspection and repair can easily be made when warps are being changed.

If a leather-faced binder shows that the leather is worn down thin on the upper or lower surface, it is a sure indication that the binder requires truing. Such wear reveals also that the shuttle is contacting but part of the binder width, and the shuttle throw may be so erratic that chafed warp yarn results and eventually broken warp ends or small smashes are made.

To true a binder, the surface may have to be planed down; or in case of a steel binder, the backend near the hole can be twisted sufficiently to make the binder true. After truing and shaping, resurface with leather. Leather $\frac{1}{8}$-in. thick is excellent for binder surfaces. A thicker leather is often too soft, whereas a thinner leather will generally wear down too quickly and therefore cause too frequent replacement.

Always shape the binder, if possible, without its leather facing. However, if leather is already in place and glued securely, the binder can be bent with the leather in place. However, if a different shape is needed on wood binders, the leather facing must be removed in order to work the wood to the desired form.

If a steel binder with leather facing is struck with a hammer, the leather is generally bruised or cut. When the binder is bent from the back, and a different shape assumed, the leather may bulge; and this retards the incoming shuttle to an extent that may become a source of frequent loom bangoffs. When the leather bulges, it should be replaced.

Fig. 3 shows a template for comparing the curve on a new binder with a curve that has been found to be satisfactory. This template can be used for either steel or wood binders. A suitable template can be made for any type loom and becomes a basis for better binder shaping if carefully adhered

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to and followed through by every fixer in the section.

To make the template, use a five-ply hardwood board as the base. Place a large bolt in one side to represent the binder pin. Place a binder on this base and drive a nail near the binder front tip as a stop. With a binder of the desired shape on the template, draw a line along the face edge in such a manner that it will be permanently marked in the hardwood. This line is now the required shape for all future binders of the same type.

When placing new binders on the loom or in testing and shaping old binders, merely follow the line on the template and keep shaping until the required form has been secured.

Improved Weaving

(*Continued from page 151*)

that would still give good service for weeks or even months were being taken from the looms; and, second, the loomfixers got to the point where they expected the second hands to find everything that might need fixing and never looked for these jobs themselves.

"We believe the best system to be one under which the second hand goes over as much of his job as possible each day, checking one main item —such as shuttles, picker sticks, camshaft bearings, or lubrication. He will find other things that need correcting as he goes over his job.

"Studying the weekly supply bills will keep the second hand well posted on what parts are being used excessively and where they are being used.

"The looms should be checked when the warps are out, by the fixer and not by the second hand.

"If a part is badly worn because it was put on incorrectly, the fixer should be shown this part immediately. If he does not know the proper way to install this part, he should be shown how on the spot. We believe that such a system makes better fixers and also lets the fixers know that we are expecting them to keep their sections in first-class condition."

Mill No. 9, which prefers inspection by the second hands, outlined its practice as follows: "Our method is for the second hand to check a motion at a time on a group of looms. The second hand make notes of anything found wrong and gives the loomfixer a list of these defects. He keeps a carbon copy of the list and goes to the looms later for a spot check.

"We check for thin places by checking for such things as loose or worn rocker bearings, worn lay guides, align-

(*Continued on page 205*)

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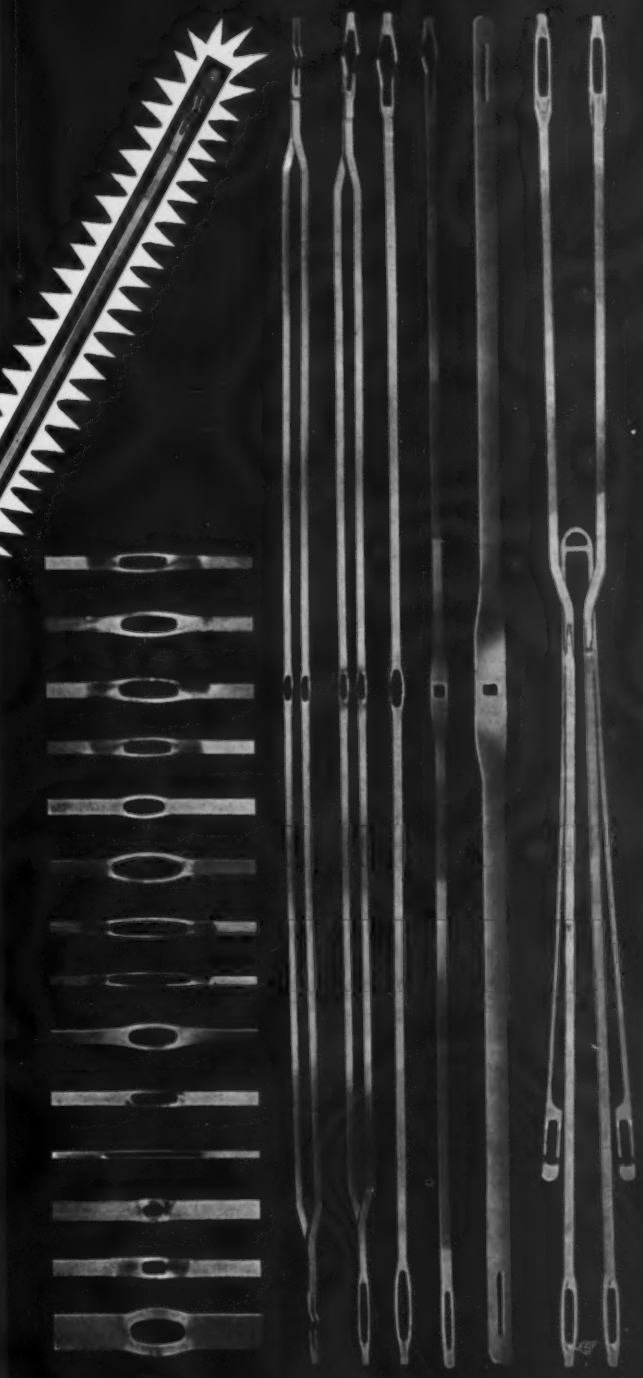

STEEL HEDDLE MFG. CO.

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Products of Science

Be it a delicate silk heddle or a heavy duck heddle—a frame—reed—shuttle—or in fact anything pertaining to LOOM HARNESS EQUIPMENT, this Company produces it scientifically—with the utmost care and attention. We are not limited to one plant but have four large plants strategically located to render the most intimate and personalized service to those located in that area. Everything that science, experience and money can buy has been done to give you, the user, the most satisfactory product you can buy.

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Atlanta, Ga. • Greensboro, N. C. • Providence, R. I. • Montreal, Can.

(*Continued from page 202*)

ment of filling fork with filling grate, and loose swords.

"When a new shuttle is issued by the supply room, the number of the loom on which the shuttle will be used is stamped on the shuttle. The supply-room girl delivers the shuttle to the foreman, who checks the loom before the shuttle is put on. Within three days after installing a shuttle, he goes back to the loom and checks the shuttle for wear."

Question No. 10. *What method do you use for cleaning looms?*

Written answers received from 17 mills reveal that most of the mills give each loom a thorough cleaning when the warp is out and do additional light cleaning with air at regular intervals. Mill No. 16 wrote: "Looms are blown off with compressed air once each 8 hr. by a blow-off hand and cleaned with mineral spirits once in 192 hr. of operation by the warp hauler. Drop wires are blown once each 8 hr. at the time that the entire loom is blown off."

From the floor, a representative of the Fairfax, Ala., mill of West Point Mfg. Co., stated that at Fairfax they do two kinds of loom cleaning. One crew cleans each loom when the warp is out. With the cloth roll covered, a mixture of kerosene and red engine oil is sprayed on the moving parts of the loom and removed by brushing and blowing with compressed air. Oil holes are probed with a wire, and all shafts are freed of clinging yarn. The loom is then turned over to the fixer

Causes of Broken Quills

1. Shuttle going too deep
2. Shuttle bouncing
3. Lay not set properly under battery
4. Feed-pawl eccentric pin not correct
5. Weak shuttle spring
6. Transfer hammer not set properly
7. Bobbin-shift guide not set properly
8. Bobbin supports broken
9. Filling too large
10. Shuttle feeler not set properly
11. Worn or loose rocker shaft
12. Worn latch finger or bunter
13. Battery too high
14. Midget feeler trip latch worn
15. Loose crankarms
16. Bobbin out of line in disk
17. Right-hand picker low on back
18. Picker-stick guides set too far from lay
19. Broken lay-end plate
20. Filling cutter timed ahead of latch
21. Filling cutter binding
22. Filling cutter set too low.

Fig. 3. Checklist for loomfixers shows 22 causes of broken quills.

STRIPES

—are at their best when knitted or woven from cotton yarns package dyed by Globe.

Eighty-one years of yarn dyeing experience are behind the selection of Globe's modern package dyeing equipment, and the efficient service given by Globe to important manufacturers of yarn dyed fabrics.

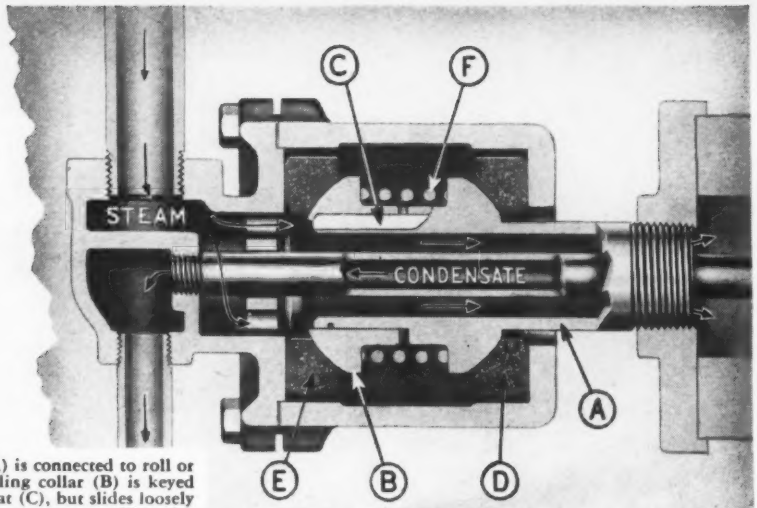
Consult us about your yarn dyeing problems.

We do Package Dyeing on tubes, skein and warp dyeing, warp marcerizing.

Globe DYE WORKS CO.

Yarns we process include cotton, rayon, acetate, worsted, spun rayon, nylon, Aralac, blended and novelty yarns.

FRANKFORD **PHILADELPHIA 24, PA.**



Nipple (A) is connected to roll or drum. Sliding collar (B) is keyed to nipple at (C), but slides loosely over it so pressure can fill entire housing. This pressure becomes the sealing force, by pressing seal ring (D) tightly against nipple. Both seal ring and bearing ring (E) are of special carbon-graphite, which eliminates oiling and packing. Spring (F) is for initial seating only. Type B Joint illustrated; other types, sizes for all needs.

...it's the biggest little trouble-saver in the mill...

In terms of physical size alone, the Johnson Joint could hardly be called big machinery. But in its ability to save time and trouble, and promote plant efficiency, its stature approaches anything the industry has ever seen.

The Johnson Joint was designed to go after the old stuffing box and steam fit troubles in a business-like way, and it literally knocks the stuffing out of them. There's no packing of any kind. There's no oiling required, ever. There's no adjusting — the higher the pressure, the tighter the seal. There's little to fear from misalignment—with provision for both lateral and angular movement built right in. Note besides how neatly it provides for more efficient syphon drainage, through the same head that admits the steam.

In dollars and cents, what does all this add up to? Well . . . enough at least to pay the cost of switching over to Johnson Joints in just a short while. Enough certainly to make the Johnson Joint too big to overlook.

Write for literature and the name of your nearby Johnson representative.

JOHNSON
Rotary Pressure
JOINTS

THE JOHNSON CORPORATION
814 WOOD STREET
THREE RIVERS, MICHIGAN

for checking and then to the oiler for lubricating.

In the second type of cleaning done at Fairfax Mill, roving loom cleaners, each assigned a certain number of looms, stop the looms, blow off the lint and dust, blow underneath the looms, and clean the drop-wires. Each loom is cleaned in this manner each 8 hr. of operation.

A special blow-off crew is used at Pepperell Mfg. Co., Langdale, Ga., Robert J. McCamy reported from the floor. This crew, working on the third shift, at which time the looms are not in operation, gives the looms and drop-wires a thorough cleaning with compressed air.

Question No. 11. *Give any information about training weavers that you have found helpful.*

Written and oral answers to this question indicate that the majority of mills use more or less the same method for training weavers. The procedure followed at the Langdale, Ala., mill of West Point Mfg. Co. outlined from the floor by Robert L. Rearden, is representative of the method used by a majority of the 18 mills.

Smash hands, reported Mr. Rearden, are preferred for weaver trainees; but if smash hands are not available, battery hands or workers with other weave-room experience are selected. A trainee supervisor, chosen for qualifications as an instructor and as a weaver, is taken off her stand of looms and assigned the task of training the learner. When the learner masters the basic technique of weaving and is able to operate a few looms, these looms are assigned to the trainee; and other looms are added to the assignment as the learner progresses. An average of twelve weeks is required for training weaver learners, Mr. Rearden reported.

Question No. 12. *What are the advantages, if any, of bracing looms with extra bearings on the crankshafts, camshafts, etc.?*

Nine mills submitted written answers to this question. Six mills reported that the use of bracers will decrease breakage of loom parts, while three mills did not comment on this feature. Five mills stated that bracers will aid in reducing loom vibration, and four mills did not comment. Three mills have been able to increase loom speeds, and five prefer to operate their braced looms at the same speeds as before bracing them.

Mill No. 3 wrote: "We have tried the extra bracing, or spreaders, on 40-in. E-Model, 60-in. E-Model, and 68-in. modified D-Model looms. Our experience has shown that on the wide looms the increased bracing does benefit the

This is Staple Fiber

one of the most important developments in synthetic textiles in recent years

Ten years ago, production of synthetic staple fiber amounted to scarcely twelve million pounds. This represented about 4% of total U. S. synthetic textile fiber production. By 1946, annual production had increased fifteen times over, to approximately 180 million pounds—representing a 28% share of the total production of major synthetic fibers for textile purposes.

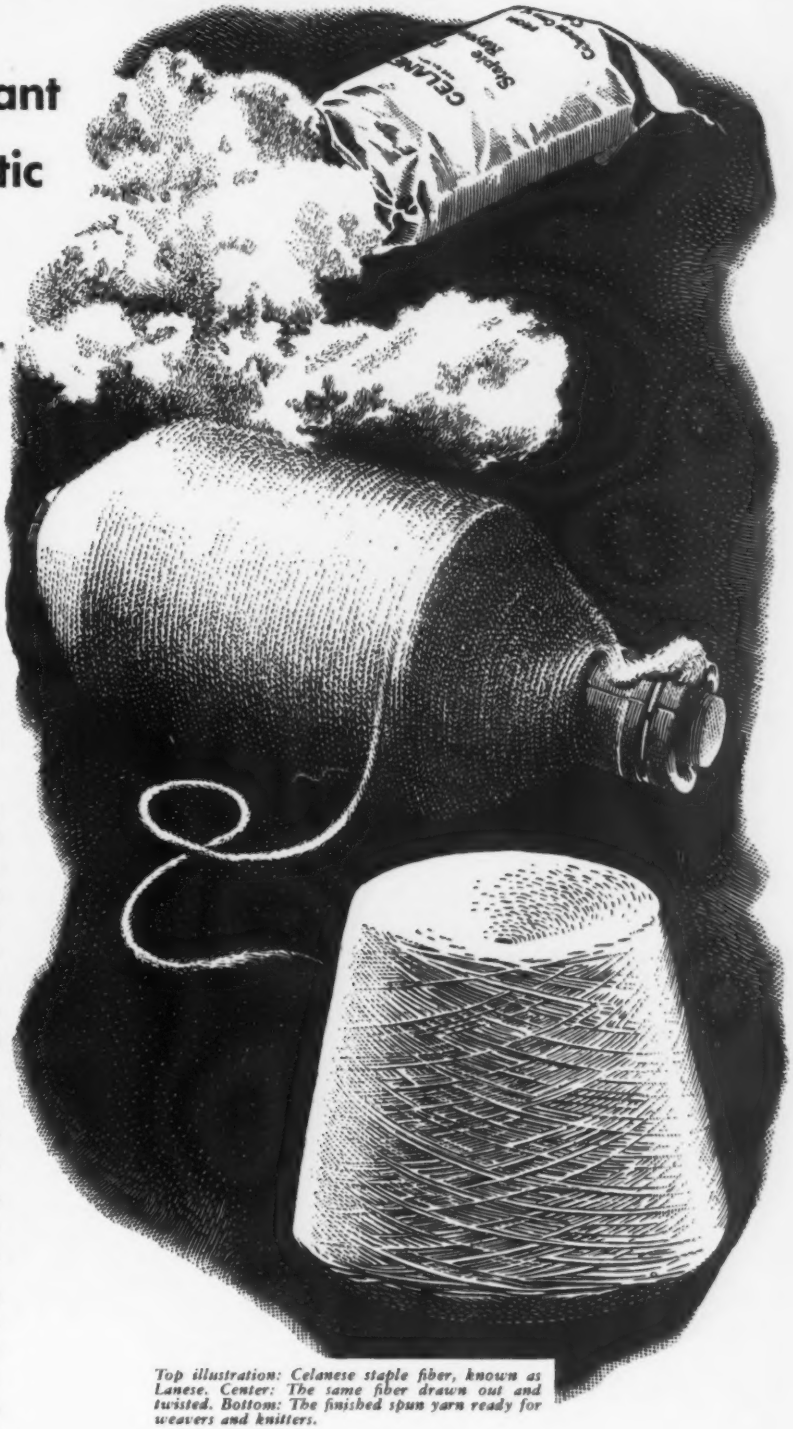
Staple fiber is produced essentially by cutting a quantity of continuous filaments into short lengths, corresponding to the lengths of cotton and wool fibers. These staple lengths are processed into yarn on regular spinning machinery by the woolen, worsted or cotton systems.

One reason for the rapid expansion of synthetic staple fiber is its enormous versatility. Cellulose acetate staple fiber, of which Celanese Corporation is a major producer, is highly adaptable for a wide range of textile uses. It brings the distinctive advantages of Celanese* synthetic yarn into new fields as far apart as floor coverings and blankets, women's and men's suitings, drapery and upholstery fabrics in a great variety of weaves and textures.

Lanese*, the trademark for Celanese synthetic staple fiber, is known to the textile industry for its quality and adaptability for economical manufacturing. It is extensively combined with cotton, wool and viscose process yarns to produce combination fabrics, with many special advantages.

Because its quality is scientifically controlled, there is appreciably less waste with Lanese, whereas the waste factor with natural fibers may be substantial. Still another decided advantage of synthetic fiber to textile mills is its freedom from violent price fluctuations, thereby eliminating the need for hedging and carrying long-range inventories.

Lanese is an example of Celanese creative research—a program continuously at work to produce better products and to improve their service to industry and the public. Celanese Corporation's current and long-range plans call for substantially expanded production in the important field of synthetic staple fiber. Celanese Corporation of America, 180 Madison Avenue, New York 16.



Top illustration: Celanese staple fiber, known as Lanese. Center: The same fiber drawn out and twisted. Bottom: The finished spun yarn ready for weavers and knitters.

Celanese*

CHEMICALS...TEXTILES AND PLASTICS

*Reg. U. S. Pat. Off.

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Skinner's
SUNBAK
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Sunbak Rayon Face 100% Virgin Wool Nap
Fibre Content by Weight 65% Rayon 35% Wool
A PATENTED FABRIC

How TESTING Paced the Development of Skinner's SUNBAK* Fabric

Skinner's Sunbak Fabric didn't reach its present state of perfection just by chance. Its development was based on a planned program of TESTING.

As each experimental fabric left the loom, it was immediately submitted to the United States Testing Company, Inc., for Tests on warmth, strength, and cleanability. Inadequacies were noted, corrected, and the new samples were tested again. After a series of such tests William Skinner & Sons introduced Sunbak to the market . . . as fine a fabric as human ingenuity can produce. It was considered so unique, a U. S. Patent was issued on the construction.

But Skinner didn't stop there! Sunbak was put on a program of constant testing and retesting . . . its quality checked continually as a quality control feature.

Another example of the proper use and application of TESTING.

If you are faced with a similar problem of fabric development, let us outline a program of testing and quality control for you. Write or phone.

*Reg. U. S. Pat. Off.

UNITED STATES TESTING COMPANY, INC.

HOBOKEN NEW JERSEY

PHILADELPHIA, PA. · BOSTON, MASS. · WOONSOCKET, R. I. · CHICAGO, ILL. · NEW YORK, N. Y.

loom from the standpoint of decreasing mechanical breakdowns. Vibration of the looms is materially decreased. However, thus far we have not been able to justify any increase in speed."

Mill No. 16 wrote: "Our experience has been confined to only three looms: a 28-in. E-Model, a 40-in. E-Model, and a 62-in. D-Model. We increased the speed of the 28-in. loom from 147 p.p.m. to 176 p.p.m., that of the 40-in. loom from 143 p.p.m. to 167 p.p.m., and that of the 62-in. loom from 128 p.p.m. to 149 p.p.m. We made extensive tests on these three looms and found that they did seem to run smooth enough at these increased speeds. Due to the type of material being woven and the type of filling being used, we found that it was better for us to operate at the lower speeds. We did not change over any additional looms."

Question No. 13. *Have you had any trouble with baggy selvages or cloth weaving slack on one side? What was done to eliminate this condition?*

Mills answering this question specified the following measures that contribute to correcting baggy selvages and slackness on one side of cloth:

1. Get uniform tension across the warp during slashing;
2. Level drag roll, whip roll, take-up roll, drop-wires, and stop-motion girder;
3. Use a single-spring wind-up motion on the cloth-roll traverse, or make certain that there is equal tension on the double springs;
4. Properly time the tape selvage motion and harnesses;
5. Keep temples working freely; and
6. See that the shuttle moves properly across the loom.

Question No. 14. *What is the cause of and remedy for an excessive amount of broken quills on the transfer?*

A loomfixer's checklist, Fig. 3, for causes of this condition was given by Mill No. 3. Mills answering this question agreed that preventing broken quills is basically a matter of proper loomfixing.

Question No. 15. *What is the best method of fastening high-speed looms to the floor: lag screws, bolts, or felt pads?*

Twelve mills had run high-speed looms sufficiently long to express preferences in methods of fastening the looms to the floor. Five mills use only lag screws, but one of them stated that it was finding the screws unsatisfactory. Three mills prefer bolting looms to the floor; and four have found felt pads satisfactory, particularly on looms with individual drives.

Question No. 16. *Do you take off*

two decades of pioneering

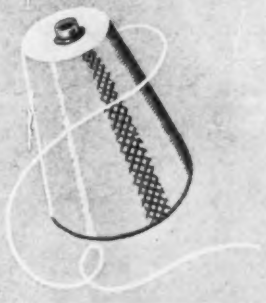
A Continuous Record of Product Development

Since 1926, when it pioneered bleached sulphite paper pulp from Western Hemlock, Rayonier has been making scientific history in the interest of its customers.

Through research, the company perfected a rayon pulp from a brand new source of supply — Southern Pine. This opened up a new agricultural and industrial economy in the South.

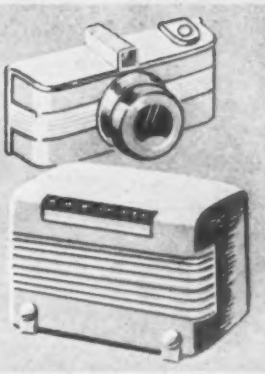
In 1930, the company introduced the first pulp from Western Hemlock for the viscose rayon industry. A dissolving pulp for use in making cellophane followed.

Another Rayonier pulp enabled the manufacture of high tenacity yarns for tire cord, contributing to one of the most outstanding advances made by the rayon industry.



Upsetting precedent, the next product was a pulp for the acetate rayon industry. A cellulose for nitrating purposes also was developed.

Special pulps have been developed also for making photographic papers, certain plastics and other cellulose-base products.



Pioneering requires initiative, vision, confidence and courage — a continuing search for new products and new uses. This is an underlying feature of Rayonier's customer program.

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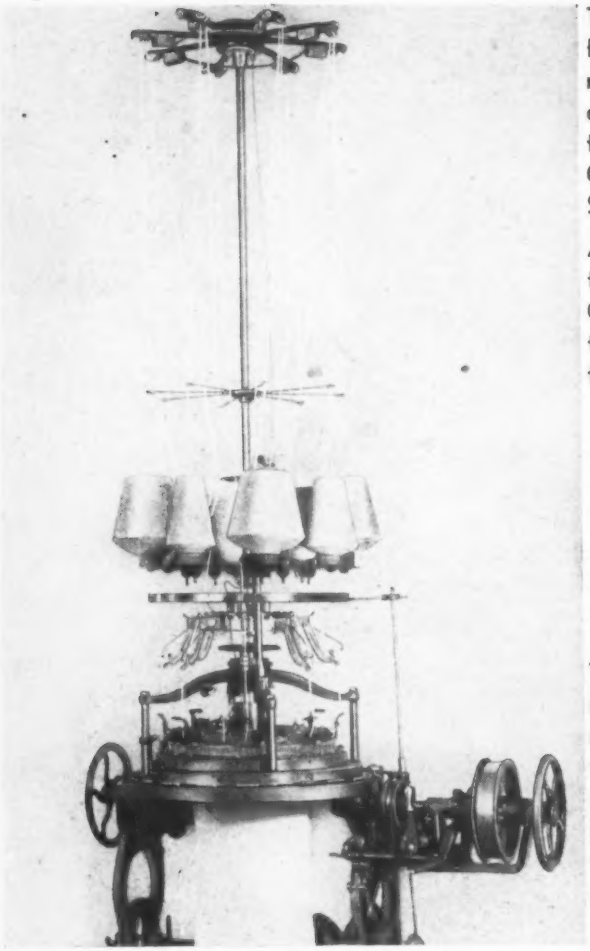
All Knitting Machines NEED CRAWFORD Electric Stopmotion



CRAWFORD Stopmotion attached to SCOTT & WILLIAMS Knitting Machine.

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All of the following manufacturers will furnish CRAWFORD Stopmotions on your specification:

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Talk to the men who are using CRAWFORD Stopmotions. We'll tell you who they are. Write today and we'll send the NEW 1947 BOOK, as soon as it comes off the press.

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cloth at the cut mark? What method do you use?

The variety of methods of cloth doffing given in answer to this question indicates that there is no standard practice for doffing cloth. In nearly all cases, the procedure was dictated by the type and quality of the fabric being woven.

Carding Techniques

(*Continued from page 129*)

sell Mfg. Co., Alexander City, Ala., because at the old settings the perforated screens left too much short fiber and mote in the stock. With the following settings, now used, approximately the same amount of waste is removed by rib and perforated screens:

	Back	Middle	Front
Rib (in.)	0.017	0.034	1/8
Perforated (in.)	0.022	0.068	3/16

Back screen settings were opened at Columbus Mfg. Co., Columbus, Ga. The results were a reduction of 28% in the amount of fly, with no change in the breaking strength of the yarn. Settings used at this mill are:

	Back	Middle	Front
Rib (in.)	0.022	0.034	0.068
Perforated (in.)	0.034	0.034	0.068

Metallic card clothing was said to keep cards dirtier than does wire clothing, although the quality of carding remains the same. Fifty cards equipped with metallic clothing are stripped once a week at Eagle & Phenix Mills, Columbus, Ga., B. D. Pritchett, superintendent, reported. More attention must be given the flats because of increased loading. This type of clothing adds from 600 to 1,000 lb. of weight to each card.

Cards equipped with metallic clothing are also stripped once a week at Eva Jane Mill, Sylacauga, Ala. The chief objection to the clothing, as found by this mill, is that it adds 594 lb. to the weight of the card.

Handling Methods

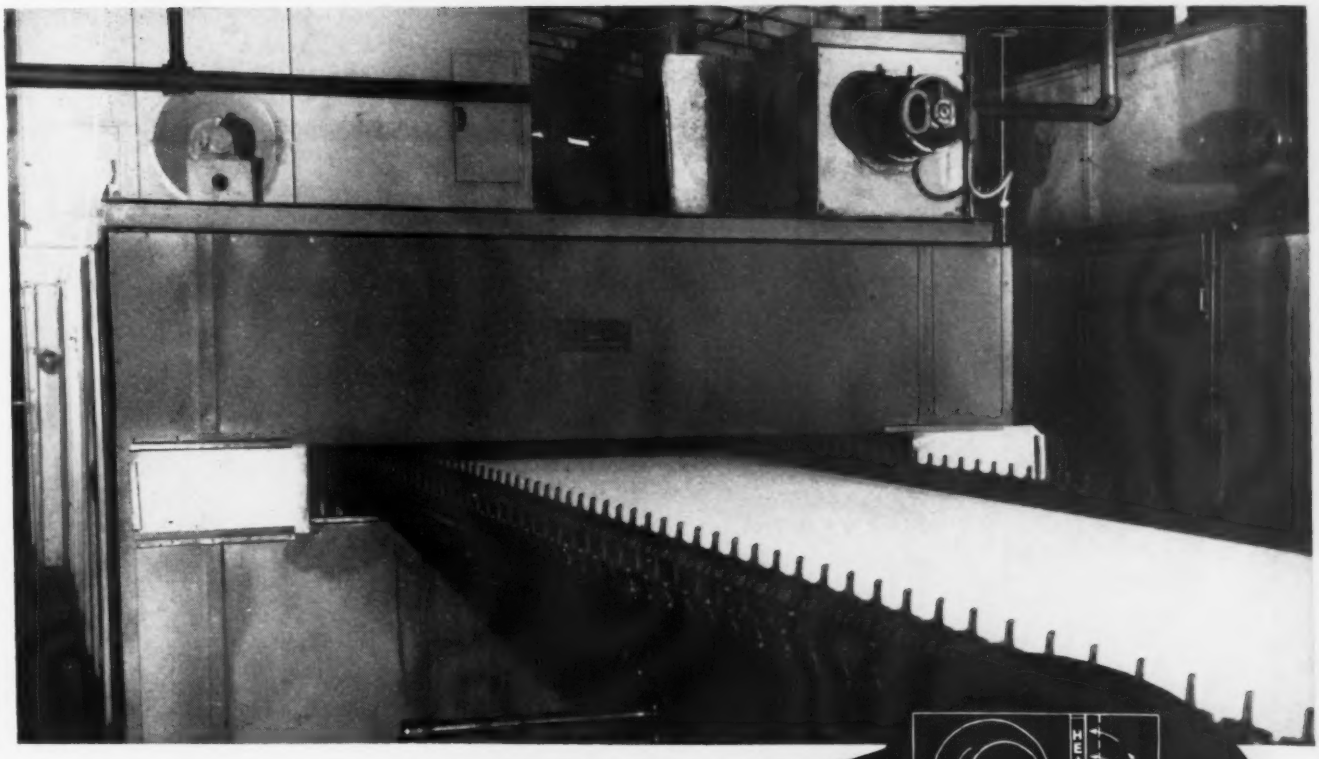
(*Continued from page 117*)

labor was manual. The crew lined up outside the car, two men removed the bales from the car, and the other laborers carried the bales off on handtrucks to one of the two platform scales. Usually, the car was a considerable distance from either scale; and, also, the hauler frequently had to retrace his step in order to bring the bale to the proper warehouse. Traffic congestion at the scales was acute, due partly to space limitations and partly to the fact that the checker often found it difficult to keep up with the haulers. The stacking crew consisted of five men.

How were mechanical means in-

Unique air circulation makes possible

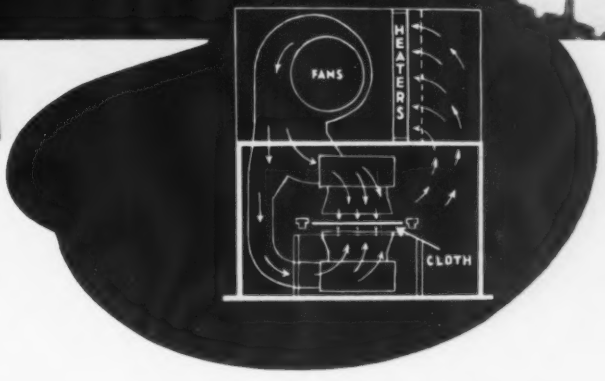
HIGH SPEED DRYING



PROCTOR *Super-Speed* SYSTEM

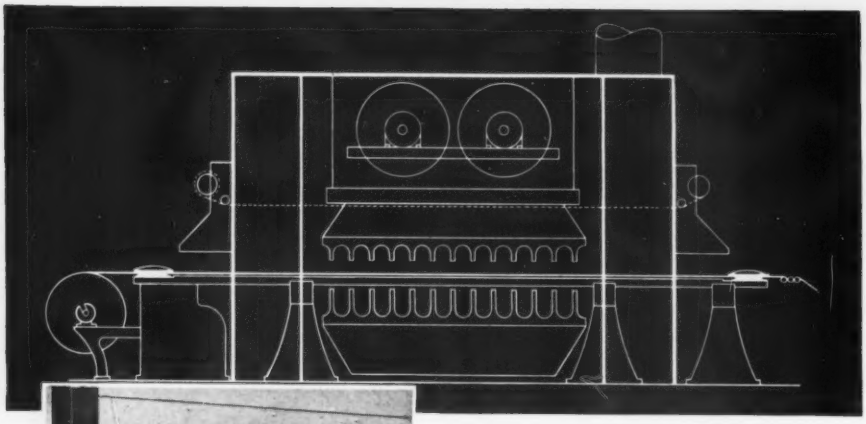
APPLIED TO

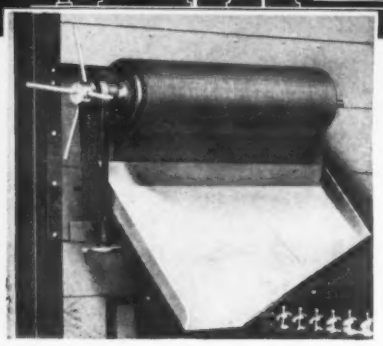
SINGLE RUN TENTERS



The factor which contributes most to the high speed operation that is possible with this modern system of tentering is *air circulation*. When a single run tenter is enclosed in a Proctor housing, air at high temperatures is impinged through nozzles against *both* sides of the fabric as it is carried through the drying chambers. Circulating through the goods, this penetration of uniformly heated air reduces drying time and increases output. The proper regulation of moisture in the air, so as to obtain speedy drying without harsh effects on the cloth, has an important bearing on the quality of the finished goods. Of course, output varies with individual plant requirements, length of the machine and the character and weight of the goods—but is always kept to a maximum by this system. Temperatures, air velocity and drying speed may be altered to suit a wide variety of fabrics and finishes. One of the most recent applications for this system has been in the drying of fabrics preparatory to curing. If the finishing of fabrics which must be held to width is part of your plant operation—investigate the decided advantages of the Proctor "Super-Speed" System applied to single run tenters.

PROCTOR & SCHWARTZ INC. *P & S* PHILADELPHIA 20, PA.

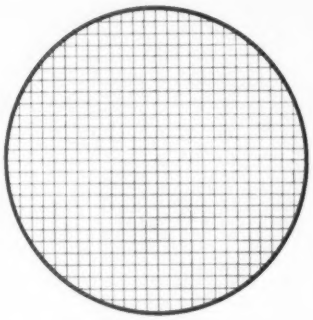




"NATIONAL" MODEL SR-4 TENTER DRYER

With Continuous *Fine Mesh* Filter Screen

Cleaning *all lint* from the circulating air in the "NATIONAL" SR-4 is done quickly and easily by the Continuous Filter screen with its *16 mesh.* Only the large radiation surface provided in this modern Tenter Dryer permits the use of a screen of such filter fineness. Result—*all* lint from spuns, woolens, mixtures, etc., can be *filtered* from the circulating air and *quickly removed* from the dryer, assuring continuous maximum production at all times from this flexible, *high-powered* machine.



Actual Size of Mesh in SR-4 Filter Screen

Greater Drying Capacity Per Lineal Foot of Frame

is the over-all reason why drying costs are *lower* in the SR-4, designed especially to provide maximum efficiency from today's high-speed frames. Other advantages include adjustable-volume fans; low head room; individual unit control; and easy accessibility to all parts of dryer and frame.

* * *

Write or Phone for Complete Information

Automatic
Piece Goods Dryers
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Yarn, Skein and
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THE NATIONAL DRYING MACHINERY CO.

W. LEHIGH AVE. and HANCOCK ST., PHILADELPHIA 33, PA.

New England Agent — C. H. INGALLS, Providence, R. I.

troduced into this case to achieve the desired goal of eliminating costly, inefficient labor?

A combination of various types of equipment was found to be suitable. A single, electrified, overhead track was provided, to be run continuously along side the full length of all platforms. On this track, mounted on trolleys, were what may be termed, for convenience, two "print-weigh hoisting units." Each unit consists of a one-ton electric hoist from which is suspended a crane scale. The function of the track is not transportation; its sole purpose is to carry the hoist units so that they can be hand-propelled directly to any point along any platform, wherever a car may be ready for unloading. The only other equipment required is an industrial fork truck with several trailers.

With this equipment, employing only six men, it is possible to use the following methods: (a) take a bale out of the car and dump it on the platform; (b) set grabs on bale, press push button, and hoist bale two feet or so above the platform; (c) insert tag in automatic print-weigh mechanism of the scale and attach it to the bale; (d) lower the bale onto the trailer; (e) continue this procedure until six trailers are so loaded; (f) couple the fork truck to the train of trailers, and haul them to the warehouse; (g) uncouple the fork truck, lift the bales off the trailers, and stack them in the warehouse.

SYSTEM FOR PICKER LAPS. Picker laps are probably the most abused item handled in the mill. There are mills, relatively efficient in other respects, which have done nothing to improve lap handling. Considering the ability of the lap to be damaged, it is not surprising that an enormous quantity of lap waste is made through rough handling during transportation, often via elevators and narrow passages, and from friction between laps that are jostled together. Finally, a considerable amount of time is lost in tearing off a damaged piece of lap and in finding the end to creel the card.

Following is a simplified explanation of how a small mill containing only two pickers and sixty cards applied a system for handling laps.

The system as worked out consists of simple lap carriers suspended on trolleys from an overhead track, including a built-in, automatic truck scale.

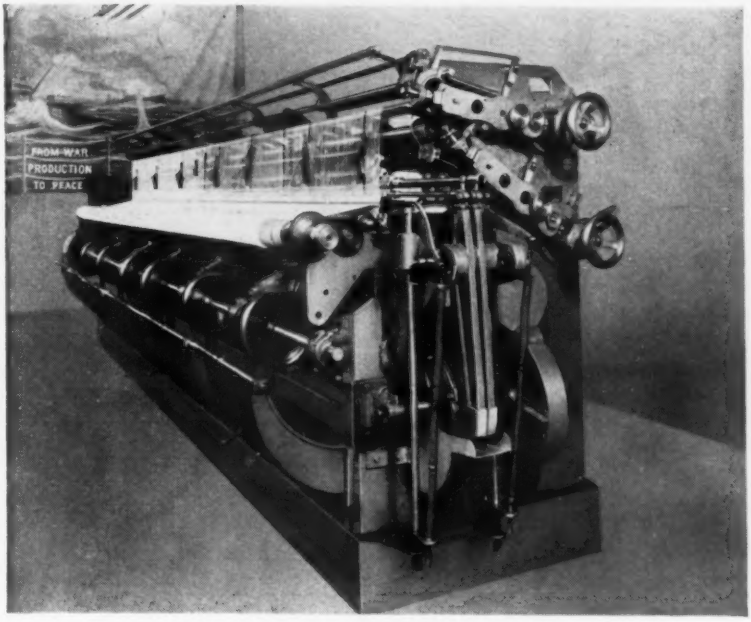
From the sloped carrier-return line (see Fig. 1), the picker tender releases, at point A, two empty carriers onto the track section in front of the pickers. He removes the lap stick

ROBACZYNSKI MACHINE CORPORATION

340 TEN EYCK ST., BROOKLYN 6, N. Y.

Manufacturers of

FLAT KNITTING MACHINES • PURL STITCH MACHINES • BORDER MACHINES • TRICOT MACHINES



VERSATILE HIGHSPEED TRICOT MACHINES

Builders of high speed machines. This machine is designed with a heavy base and heavy frames to withstand the high speed for which it is intended.

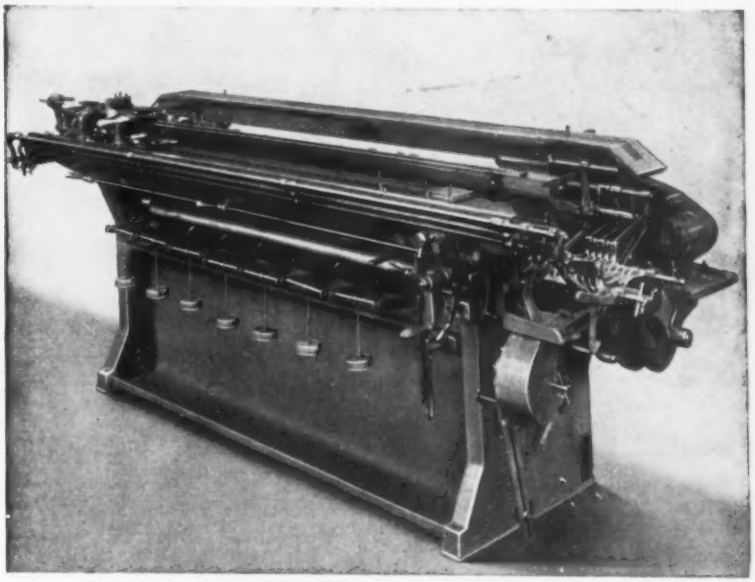
It has a novel tension system which is very sensitive for 21" beams.

Simple Take-off system.

Very accessible system in setting trucks for qualiity as well as other adjustments. It's a big producer with a long and carefree life assured.

PURL STITCH OR LINK KNITTING MACHINE

Known to be the simplest machine of its type in the world to operate. It produces all the modern stitches used in garment fabrics. Note its receptacle in front to prevent soiling of fabrics coming down from the machine.

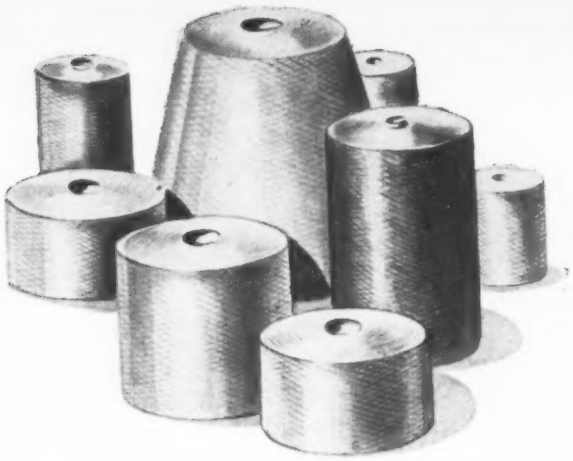


BORDER MACHINES

Twin head Border Machines and the fastest circular knitting string and belt machines in the world.

BUILDERS OF OUTERWEAR AND UNDERWEAR FLAT KNITTING MACHINES

For over thirty years we have been building knitting machinery in our modern plant in Brooklyn. Designed by L. Robaczynski, these machines are all of sturdy construction, big producers with a long life and simple to operate. See them at our plant or send for detailed information.



Announcing

For the Mid-West

A NEW MODERN DYED YARN SERVICE

- PACKAGE DYEING ON TUBES
- SKEIN DYEING

TO

- IMPROVE **QUALITY** AND

GIVE BETTER **SERVICE**–ALWAYS
IS OUR PLEDGE

MID-WEST PROCESSORS, INC.
Carl E. Sick, President
LIBERTYVILLE ILLINOIS

from a carrier, inserts it in the lap roll, pulls it out of the lap roll, hooks the carrier to the lap stick, and doffs the lap. To gain the necessary elevation, a short, automatic, mechanical booster raises the lap onto track *B-C*; it rolls by gravity from *C* and comes to rest on the scale.

The overhead-track print-weigh scale is set to record the weight only of laps which fall within the allowed tolerance. Compensation for fluctuation in the moisture content of the cotton is obtained through a counterweight, which is periodically checked and adjusted by a supervisor. After a set interval of time, to allow the scale indicator to come to rest, if the lap is within tolerance, the printer automatically records the weight and furnishes the impulse to remove the lap from the scale. It rolls by gravity to the stop at *D*.

At *D*, the card tender releases from ten to twelve laps at one time and guides them into a storage line. This system requires that the present storage racks over cards be removed; instead, the laps rest on the carriers suspended from the storage track in a position corresponding exactly to that of the present racks. When a lap is removed from a carrier and the card is creeled, the stick from the previous lap is set on the empty carrier. After a row of cards has been creeled, the empty carriers are pushed out into the return lines *E-F* and *F-G*, where they roll from *F*, by gravity, towards *A*, thus completing the cycle.

If the weight of a lap should be outside tolerance, the scale does not print but makes a signal, by means of a light, a horn, or both. When this happens, the picker tender goes to the scale and presses a button which opens the reject switch into the setback line *J-K*. He also notes to what extent the lap is off weight and adjusts the picker accordingly. Since an off-weight lap cannot be removed from the scale except through pressing the reject-switch button, its rejection is absolutely certain. Empty carriers return to *A*.

ADVANTAGES. About a dozen similar installations have been worked out, so far, for picker rooms running from one to as many as 36 pickers. The calculations in every one of these cases showed an amortization within a maximum of 2½ yr. But this is not even the chief benefit to be derived from the installation. Other significant advantages are:

(a) The laps are weighed automatically, which excludes the possibility of human errors.

(b) A printed record of laps pro-

HUNTER
High Speed Continuous Cloth Washer for Woolens, Worsteds, Cottons, Part Woolens, Blankets, etc.
JAMES HUNTER MACHINE CO.
Hunter
NORTH ADAMS MASS.

THIS BROCHURE DESCRIBES

How you can save money

IN YOUR CLOTH SCOURING OPERATIONS

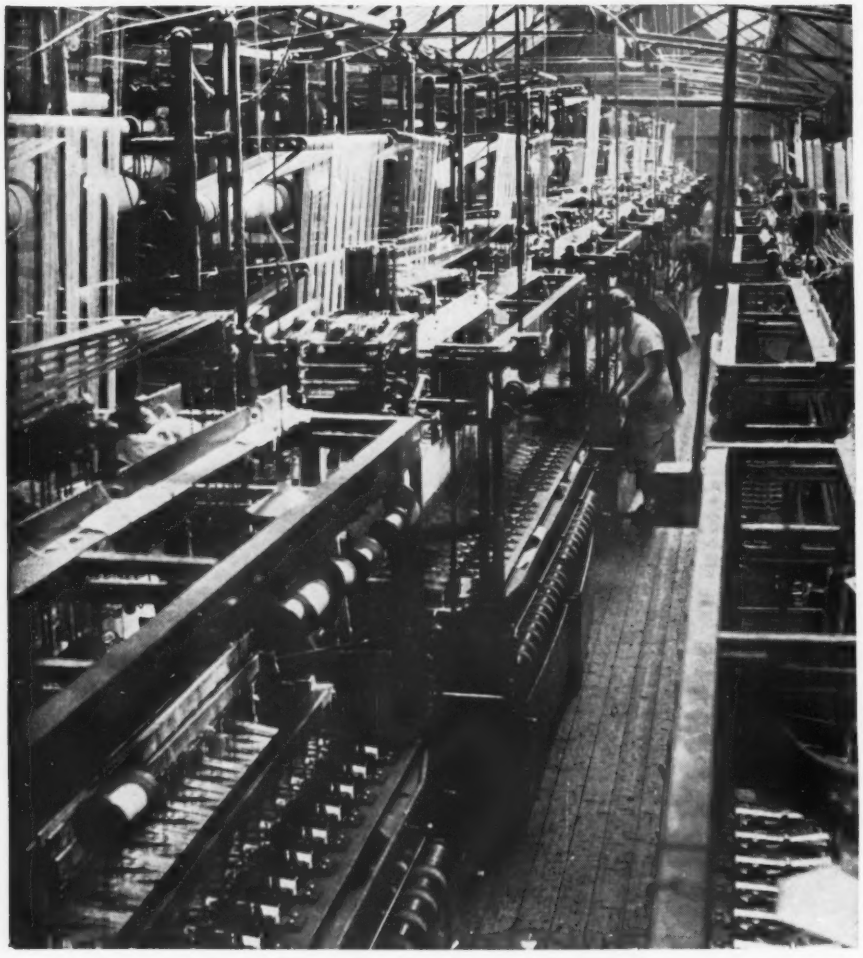
We invite you to write for the bulletin pictured on this page. It describes the New Hunter Continuous Washer which affords a new continuity of production between fulling and drying, for after the goods enter the washer they do not require attention until they leave the Dryer. On leaving the Washer the goods fall into a scray from which they can be picked up by a Scutcher. After they are opened up by the Scutcher they pass through a pair of Heavy Pneumatic Hunter Squeeze Rolls directly into the dryer.

The brochure describes one user's savings: for example, this customer reports a 50% saving in labor as against the Dolly Washers. The brochure also describes how this same mill is now saving 2½ million gallons of water per week over Dolly Washer operation as well as $3.00 per day on pumping costs. It will tell you how this same mill saves up to $500.00 weekly on steam, $36.00 per week on softening costs, 50% on soap and alkali, and 66⅔% of the power formerly required.

The brochure is free and a note from you on your letterhead will bring it to you without obligation of any kind.

JAMES HUNTER MACHINE CO.
NORTH ADAMS, MASSACHUSETTS, U.S.A.
FOUNDED 1847

CLUTSOM HIGH SPEED SHUTTLELESS LOOMS



A Battery of Clutsom High Speed Shuttleless looms

SELLERS MARKETS WILL NOT LAST FOREVER

The Clutsom High Speed Shuttleless Loom has higher production at less cost than any other narrow fabric loom in existence.

Comparative figures prove that Clutsom High Speed Shuttleless looms produce over three times the output of Shuttle Looms for the same payroll. No quill winding—no down time for replacement of Shuttles—continuous filler feed-high speed production—All these and other factors contribute to the amazing result given above.

All mills are faced with rising costs of production—let us show you how yon can lower yours.

Clutsom machines will weave a variety of elastic webbing, tapes and ribbons in widths up to 2½". We are now accepting a limited number of orders for prompt delivery.

CLUTSOM MACHINES INC.

205 EAST 42 STREET **NEW YORK**

Telephone MUrray Hill 4-2327 **FACTORY: Springdale, Connecticut**

duced and frequency of rejected laps is kept automatically by the print-weigh scale.

(c) Damage to laps is eliminated.

(d) Doffing of the picker is simplified.

(e) Since the picker tender has no control over the rejection of laps, it is possible to set up a rate which pays him for good laps only.

(f) Lap storage on overhead tracks results in a gain of floor space in the picker room.

Naturally, in a larger mill, these advantages would be multiplied several times. Should the card room be located on a different floor from the picker room, this system would also automatically carry laps or empty carriers between the floors by means of a booster, or mechanical pusher chain connected to the inclined portion of the overhead-track system, eliminating the use of the elevator.

BEAM STORAGE. In the handling and storing of section beams, the prac tice in most mills is to doff them onto a dolly. Dolly and beam are pushed onto a scale, and from there hauled to storage. Beams may be stored on the floor, or rolled onto a single-tier rack which raises them some 8 in. off the floor. It requires considerable strength on the part of the hauler to handle the beams in this manner, especially over rough floors. Even if floors are in good condition to start with, they are not likely to remain so for long. Storage on the floor is obviously undesirable, as the yarn inevitably gets dirty if stored for any length of time, and it is highly susceptible to damage. In many places, where section beams are stored in rows, it can be observed that those most recently brought in from the warper room are the first to go to the slasher creels, making it possible for those in the back to lie there for weeks, or even months.

Practically all mills today use some type of overhead handling equipment over slasher creels. But in many cases, particularly in larger mills, mechanical handling should begin at the warpers. A satisfactory installation is described in the following.

An overhead track runs directly from over the warpers to the back of the three-tier section-beam racks. The two lower tiers of each rack are for full section beams and incline slightly towards the front of the rack so that beams will tend to roll forward. The top tier is for empty beams which are taken off the slasher creel; this tier inclines slightly from front to back, and beams are put in at the front.

In operation, the warp-beam han-

Leighton Machine Company

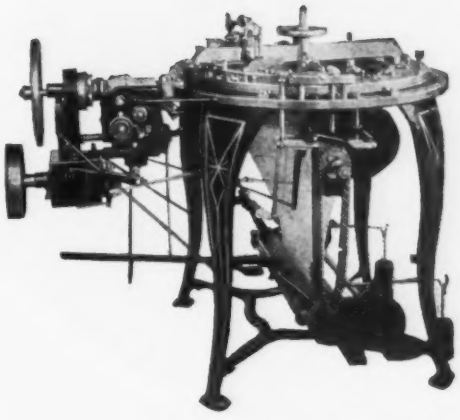
Circular Latch Needle Knitting Machines

Est. 1873 **MANCHESTER, N. H.** **Inc. 1894**

Other Leighton Machines

Three Needle Selective Rack
Three Color Stripe
•
Pattern Wheel
•
Stripe & Check
•
Single Stitch
•
Collar & Cuff
•
Jacquard
•
Cap & Legging
•
Trim Machines 3 or 4 Color
•
Special Machines built to order

Machines built in Large & Small Sizes



Transfer Machine

1 & 1 or 2 & 2 Rib automatically transferred to Single or Jersey Stitch. Two or more feeds (according to machine cut and size). Now built from 2½ to 10 cut in sizes from 9" to 28". Stitch control drum on each feed with separate control for cylinder or dial needles. Individual adjustments for all feeds at any time. *Also small size transfer machines for seamless Juvenile sweaters.*

Outerdial-Construction

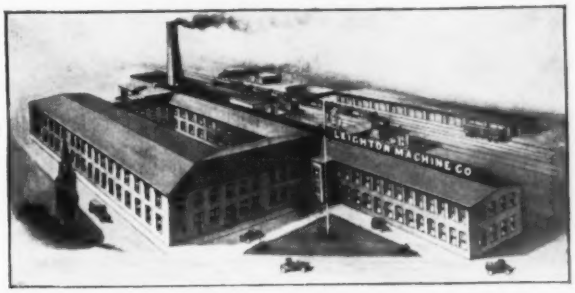
The big roomy "Outerdial" gives Leighton's versatility that has made them famous. This provides the following:

- **Freer cam action**
- **Less wear on cams**
- **Easier stitch formation**
- **Evener pull on yarn**
- **Less yarn breakage**

Seamless Transfer Sleever Automatically increases width of sleeve from Knit on Cuff to Shoulder.

Rubber Girdle Machine for fashioned garments. Feeds according to size and gauge.

Built Right



Home of Leighton Machines

Knits Right

Over 70 Years of Knitting Machine Building Experience

HILD Floor Machines

Left—HILD Tank Type Shower-feed Floor Machine

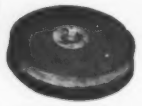
KEEP ALL YOUR FLOORS *Clean* AND *Slip-Safe*

Right—HILD Plain Handle (Standard) Floor Machine

HILD Floor Machines are designed for use with the easily interchangeable attachments pictured below to condition and maintain floors of all kinds . . . either in the mill or in office areas. Scrubbing with the Tank-Type Machine and the patented HILD Shower-feed Brush gets floors cleaner with less scrub-soap solution . . . cuts soap costs . . . does not splash water on machinery or furniture. Scrub-soap solution is fed from the tank on the handle of the HILD Floor Machine to the back of the Shower-feed Brush . . . then passes through accurately spaced holes **penetrating the brush back between each row of bristles.**

HILD Floor Machines speedily scrub open areas in lanes between machines . . . yet are easily guided into hard-to-reach spots under and around machinery. They are sturdily built for long, trouble-free service.

HILD Shower Feed Brush



Brush for Waxing or Polishing

Polishing Buffer

Steel-wool Pad and Holder

HILD System MAINTENANCE EQUIPMENT & SUPPLIES

***Write today for* FREE CIRCULAR**

HILD FLOOR MACHINE COMPANY

1313 W. Randolph St., Dept. TW2, Chicago 7, Ill.

EMPIRE
REG. U.S. PAT. OFF.
TEXTILE MILL CRAYONS
EMPIRE MILL CRAYON
JUNIOR MILL CRAYON
Made to the most exacting requirements of wool, cotton and rayon textile mills by the "OLD FAITHFUL" crayon specialists who have led their field for more than a century.
"Empire" is made in 18 clearly distinguishable colors. Large and small sticks as illustrated above.
Write Dept. T-3 for FREE Chart Showing actual colors
THE AMERICAN CRAYON COMPANY
1706 HAYES AVENUE, SANDUSKY, OHIO
NEW YORK SAN FRANCISCO DALLAS

dler hoists the beam out of the warper and propels it along an overhead track to a built-in track scale. After weighing, he proceeds to the back of the desired section-beam storage rack and releases the beam into either the lower or middle tier of the rack. He picks up an empty beam from the top tier and returns to the warper room with it. In cases in which the slasher room is far from the warpers, beams can be dispatched and returned automatically. Wherever possible, the racks should be located immediately behind the slasher creels.

In addition to labor savings, the following important advantages can be gained from such installation: (a) protection of yarn from dirt and damage; (b) elimination of contact between materials-handling equipment and yarn; (c) elimination of damage to beams; (d) reduction in loading and doffing time over slasher creels; (e) use of beams in order they are received; (f) reduction in floor maintenance costs.

HANDLING PRINCIPLES. In planning to make a materials-handling survey, the following points are worthy of consideration.

Materials handling is more than just transportation. As the word implies, it is really *all* handling, including all control and storage operations between the doffing of one machine and the creeling of the next.

Try to determine which materials-handling problem, when solved, will bring the most profitable return. While mechanical methods have been applied to many problems with good results and substantial savings, the relative potential benefits of each application vary widely from mill to mill.

A complete, accurate set of floor plans and elevations often reveal a wealth of possibilities easily overlooked otherwise. The plans will be a great aid in locating bottlenecks and solving problems. They will permit lucid discussion and decisions by the management and department heads and avoid costly oversights.

Investigate methods of rearranging machinery in order to facilitate materials handling. Proper machine layouts are often the cheapest solution to a materials-handling problem.

Keep packages at maximum permissible size, so that the number to be transported can be reduced.

Materials-handling equipment rates the same care and maintenance as any other vital machinery in the plant.

Cost of materials-handling equipment must not be balanced against labor savings alone. Among other benefits of great importance are: im-

WHEN

- 25% to 50% LOWER SINGEING COSTS WOULD PLEASE YOUR POCKETBOOK
- YOU'D LIKE TO INCREASE SINGEING SPEED FROM 2 TO 30 TIMES
- THE SAME LINE MUST HANDLE VARIOUS WEIGHTS AND FABRICS

THEN

modernize with KEMP "Radiant-Flame-Compression" Singeing

There's clear proof for all three statements.

First, actual reports from users, based on before-and-after fuel bills, reveal that operating costs can be cut in half. The explanation is in the KEMP process. It begins by completely and automatically carbureting the fuel *under pressure* before it reaches the burners, and ends by completely singeing both sides of the cloth *in one pass.*

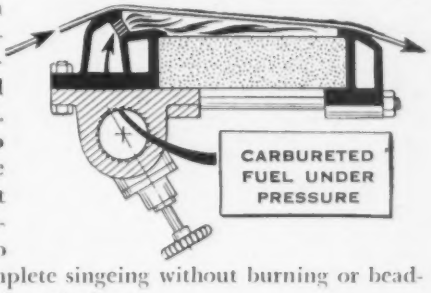
Second, numerous on-the-spot time checks have shown singeing speeds in excess of 400 yards per minute. Chief limiting factor in one large New England mill was the inability of the burner frames to stand up under the vibration and stresses of faster cloth travel!

Third and last, KEMP "radiant-flame-compression" was developed specifically for speed and versatility (see description below). In mills both here and abroad it is handling textiles as diverse as nylons, felts, sheetings and mohair — at speeds up to 30 times faster than ever before.

The coupon below is a good first step in bringing your mills closer to fast, low-cost singeing practice.

SPEED IN CROSS-SECTION

Illustrated here is a KEMP "radiant-flame-compression" burner, the fastest singeing unit on the market today. The taut fabric, represented by the double arrowed line, races across the water-cooled burner lips, squeezing strong flames between cloth and an incandescent refractory bed (mottled area). Action is so rapid, and the sweeping effect of the positive-pressure flame so strong, that complete singeing without burning or beading takes place in a single pass.



Two of these units arranged in tandem and on opposite sides of the cloth will uniformly singe both sides simultaneously at rates approaching 30 fabric miles per hour.

KEMP OF BALTIMORE

PRECISION CARBURETION ✚ ADAPTED COMBUSTION FOR INDUSTRY'S HEAT USING PROCESSES
ATMOSPHERE GENERATION & ADSORPTIVE DRYER SYSTEMS FOR PROCESS CONTROL AND PROTECTION

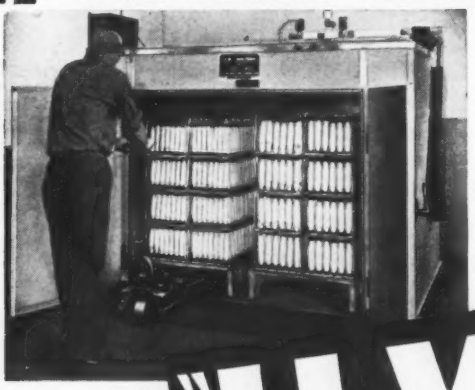
Dept. K-BITW

The C. M. Kemp Manufacturing Co.
405 E. Oliver Street, Baltimore 2, Md.

Send me your literature, and the names of major mills which use your system ☐
Send a field engineer to see us ☐

Name _____
Position _____
Company _____
Place _____

All TEXTILE FIBRES UNIFORMLY CONDITIONED



"H-W" CONDITIONER

FOR REGAIN AND TWIST-SETTING

WOOLEN — WORSTED — SILK — RAYON — NYLON — COTTON

THE INDUSTRIAL DRYER CORPORATION

STAMFORD, CONN.

WE MANUFACTURE

Steel & Stainless Steel Tanks

Copper Dry Cans

Textile Washers

Cottage Steamers

Agers

Dye Jigs

Heated Printing Tables

Pantograph Machines

WE ALSO DO

Industrial Plating for Textile Trade

SOMERSET ENGINEERING CORPORATION

SOMERSET, MASS.

P. O. BOX 402, FALL RIVER, MASS.

proved quality, reduction of damage and waste, good housekeeping, relief from congestion, additional floor space, and reduction of physical strain and accident hazard.

Consider the fact that, in many cases, the use of mechanical equipment is not always the best solution. Simple devices, such as chutes, changed layouts, specially designed trucks, etc., may do the job as well, making large expenditures unnecessary.

1947 Textile Volume

(*Continued from page 105*)

nylon, both will expand this year, the former as imports from Japan step up, the latter as new facilities open up. The two will dominate women's hosiery and various fields of finery. But even together, they won't match silk's past poundage peak which was 10% of rayon's 1946 volume. Silk's dramatic price reduction highlighted 1946 experience, although U. S.-fixed minimum prices still seem too high. Nylon price remains stable, a device to open up markets as output increases.

THE OUTLOOK. With a rise in rayon output, a drop in wool, and a relative stability in cotton use, 1947 textile totals should not move far apart from 1946. This result is to be expected in spite of the likely drop in the over-all output curve from its high at the start of the year.

The foregoing forecast may well stand up under very different developments for textiles. Output might fall soon and moderately and recover six months later to yield a 1947 total equal to 1946; or, the drop might be delayed many months, only to prove severe when it comes, and so cut 1947 as a whole down to 1946. These two courses differ greatly, and no one now can tell for sure which one will emerge.

It's hard to say just how profits for textiles will stack up in 1947 vs. 1946. You would have to take the possible diverse trends in prices and output among the branches of the textile industry and compare them with the uneven and changing 1946 experience. The year just past, of course, proved a record-breaker in earnings for most firms. Over-all in 1946, textile net after taxes is estimated at more than $500 million as against $249 million in 1945, $345 million in 1941, and $123 million in 1929.

Right at the moment, profits are running at a higher rate than ever before. What is difficult to see is just how they will fare through the 1947 recession. Using output as the guide, however, one would guess that 1947

Saran BY NATIONAL

MONOFILAMENTS THAT CREATE WEAR-RESISTANT WELT

IT'S in the tough spots that SARAN monofilaments display their rugged durability. SARAN welt both reinforces and beautifies upholstery in modern furniture, automobile seat covers and transportation seating. In this particular application, a product of Bridgeport Fabrics, Inc., a core of heavy SARAN monofilament has been wrapped with a braiding of finer strands of SARAN to form a secure reinforcement for points of greatest strain and wear. The wide color range of SARAN monofilaments permits perfect blending with every type of fabric.

SARAN is easy on clothes, too. Its natural smoothness permits you to slide comfortably into your chair without the tug and pull usually encountered in other fabrics.

CONSULT NATIONAL

Each application of SARAN monofilaments has been instrumental in suggesting still other uses to manufacturers and product designers. We, at National, manufacture no finished products; but our research and experimental laboratories, staffed by skilled technicians, are available for study and advice on the application of SARAN to your product.

NEW YORK: EMPIRE STATE BUILDING

The NATIONAL Plastic Products Company

ODENTON • MARYLAND

TEXTILE BANKING COMPANY

Inc.

Factoring Service

Puts your sales on a cash basis
Strengthens your cash position
Relieves you of credit losses

55 MADISON AVENUE • NEW YORK

will total close to 1046, with rayons up, wools down, and cottons stable. However, recognizing the abnormally swollen volumes for soft goods generally in 1946, the return of heavy goods in 1947 should pare textile earnings considerably, perhaps to the 1941 level. Earnings analysts generally take this latter view in their stock-price evaluations.

Freed from the shackles of artificial market barriers, however, the far-sighted majority of the textile industry will place foremost stress on other goals; to effect readjustments from the abnormal wartime and postwar conditions of the recent past, as rapidly yet as moderately as possible, and thereby to enhance chances for sustaining stable and long-term prosperity, both for the industry and the nation

Textile Equipment News

(Continued from page 156)

Temperature is controlled to 2° C. and may be set anywhere within a range of 80° C. to 240° C. Four individual drying chambers permit simultaneous drying of four samples, or eight samples if double containers are used. Rotary pumps force air through the specimen being dried, at the rate of 13 cfm. A vent at the top of the apparatus exhausts the moisture-laden air.

Aluminum containers for holding samples are supplied with the unit.

The apparatus is said to be completely self-contained and to operate on 220-v. 60-cycle, a.c.

Oven Equalizes Heat, Controls Temperature

A new laboratory oven which is reported to equalize interior heat by a simple double-venting device has been developed by K. H. Huppert Co.,

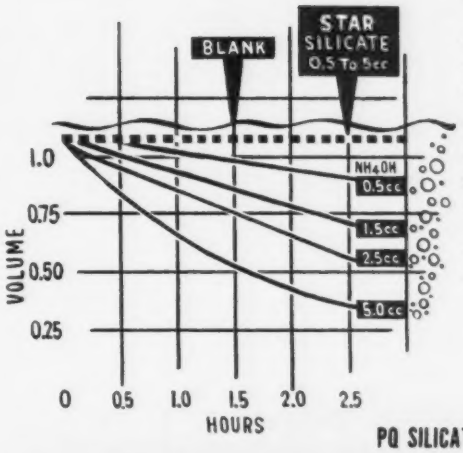
Laboratory oven features thermostatically controlled temperatures from 0 to 550° F. (Huppert)

how star silicate reacts in peroxide bleach baths

Star holds on to the molecule of oxygen until its release is needed for bleaching. Hence, as shown in the graph, when no oxidizable material is present Star Brand prevents waste of peroxide. Silicates with lower purity and quality standards allow the oxygen to come off too fast and much is dissipated.

Star is not just a filtered silicate. It's free of unstable colloidal matter which might be thrown down or precipitated as a floc. In continuous bleach systems especially, troublesome scale which forms with impure silicates is avoided by using Star.

Send for a sample of Star Silicate and compare.



PQ SILICATES OF SODA **star** BRAND

PHILADELPHIA QUARTZ CO. • Dept. A, 127 S. Third St., Phila. 6

Announcement

The Charles P. Boyd Corporation has purchased from the Fidelity Machine Company Inc., all drawings, parts and rights to manufacture high quality spoolers and winders including all textile machines formerly made by Jacob K. Altemus.

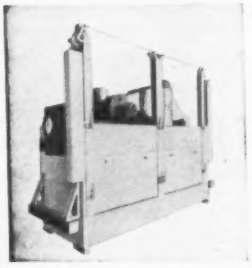
These machines include bench type and multi head spoolers, skein to bottle bobbin winders, backwinders for pirns to cones for 15 denier yarns as well as many other types of textile winders. With our excellent equipment and adequate capacity we are prepared to give reasonable delivery schedules.

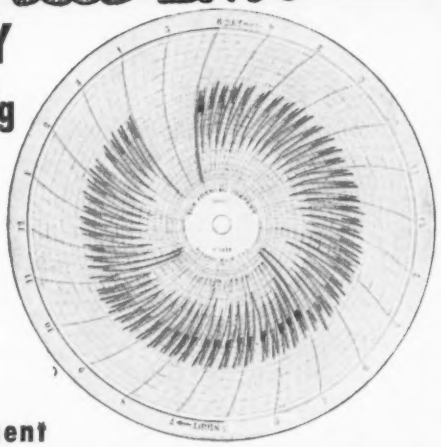
Write for literature.

Charles P. Boyd Corp.
202 North Twenty-First Street
Philadelphia 3, Pennsylvania

The Fleet Line

For UNIFORMITY
in Yarn Conditioning





Use FLEET LINE Equipment

The chart shown herewith was taken from the recording instrument on a Fleet Line Yarn Steamer and Conditioner in Guerin Mills, Woonsocket, R. I., and illustrates the UNIFORMITY of operation which prevails with this machine.

This results in exceptionally uniform yarn, and the mill is able to handle filling bobbins and larger packages interchangeably. Operation is wholly automatic.

Guerin Mills is conditioning its entire yarn output with this one machine, handling 16 duck baskets, stacked in 2 levels, at one time. Each cycle on the chart means 800 lbs. of yarn conditioned.

Catalog on request

RIGGS AND LOMBARD
INCORPORATED

FOOT OF SUFFOLK ST., LOWELL, MASS.

ANDREW K. HENRY

★

RAYON TOPMAKER

VISCOSE

ACETATE

RAYON NOILS

★

158 SUMMER STREET

BOSTON 10, MASS.

6830 Cottage Grove Ave., Chicago. The new model oven, designed for use in chemical laboratories, features thermostatically controlled temperatures from 0 to 550° F., with an added timing device to maintain desired temperatures for various periods of time as individual schedules require.

Two large vents serve not only to equalize heat but also to remove fumes and gases. A third, smaller vent permits entrance of a thermometer into the heat chamber.

Interior of the standard oven is lined with steel and a baked aluminum surface. For special uses, a stainless-steel work-chamber is available. Interior dimensions are 20 in. x 15 in. x 19 in. The oven consumes 2800 watts of power at 110-v., 3-phase a.c. or 220 v., single phase.

New-Type Scissors Have Replaceable Blades

A new type of scissors, with replaceable tool-steel blades, has been announced by R & L Mfg. & Sales Co., 7318 Puritan Ave., Detroit. Called Nu-Blade, the new scissors are reported to have the following advantages: hold edge longer, blade replacement easy and cheap, low overall cost, chrome-plated finish is non-rusting.

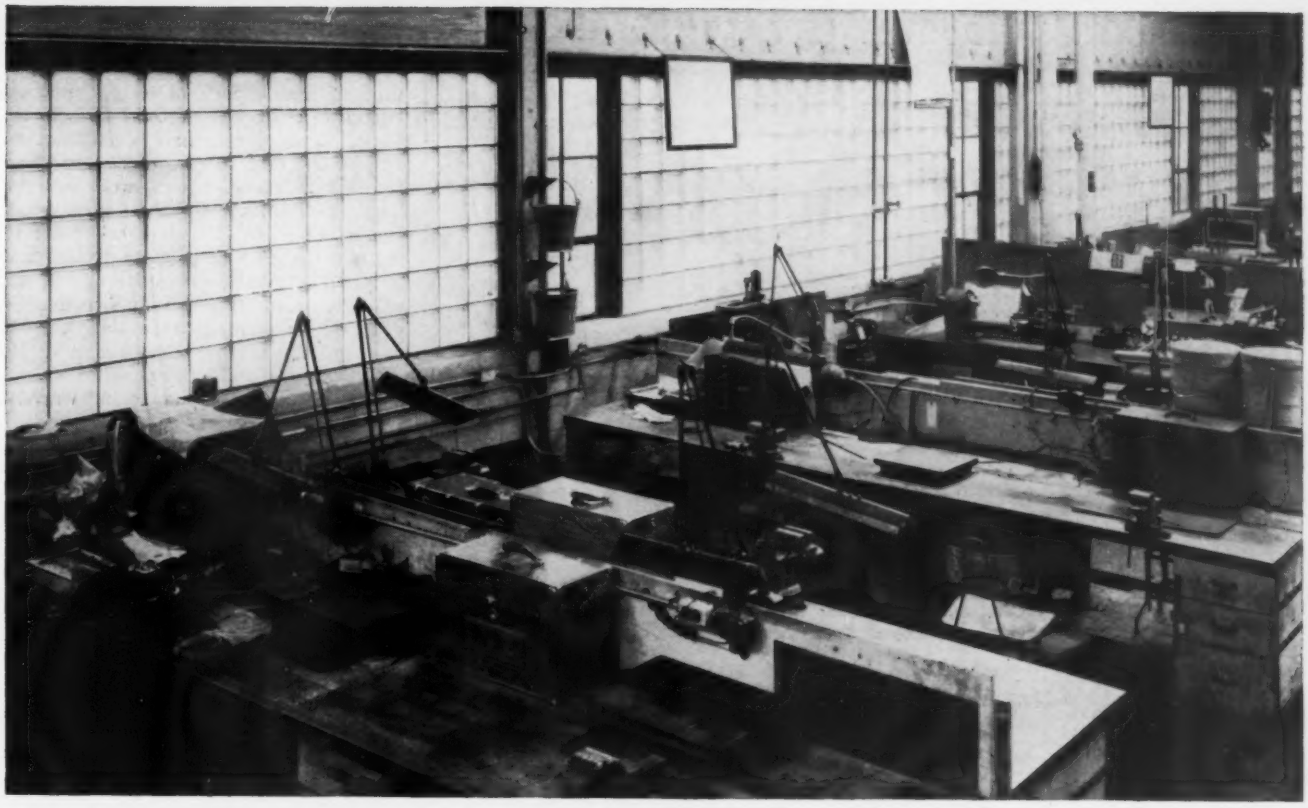
Textile Production

(Continued from page 109)

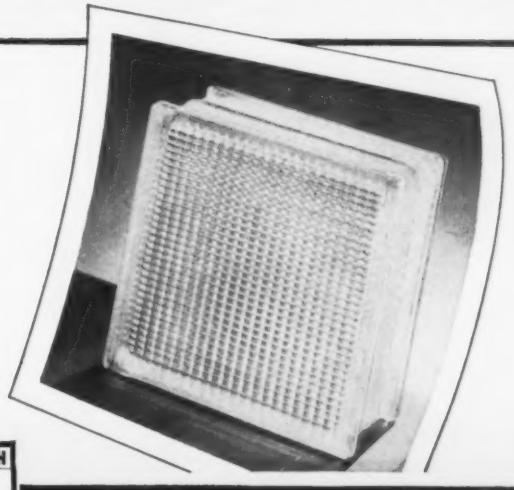
machinery which previously ran only one shift. Orders lately placed for new worsted machinery indicate a prospective increase in plant of 15%, and the resulting production is regarded as adequate to take care of the domestic market and leave a small portion for export.

Prewar, Australia produced only about 2½% of her approximately 212,000,000-sq.-yd. consumption of cotton goods. During the war, her 5,000,000-sq.-yd. production was upped to 25,000,000. Japan's cheap cotton goods had held back this industry in Australia in the prewar years, and interest is keen in the extent to which Japan will eventually resume this position.

Rayon manufacture is on the uptrend, with several large weaving plants in process of erection. Courtauld's is preparing to



How PC GLASS BLOCKS pay for themselves



SATISFIED users report that the lighting, insulating and protective properties of PC Glass Blocks cut operating costs.

PC Glass Blocks of the proper pattern distribute floods of diffused daylight, even to remote areas. That means more profitable production from the same amount of space. And you pay less for artificial lighting.

PC Glass Blocks reduce heat losses, hence reduce fuel costs. The solid panels prevent infiltration of destructive grit. The smooth glass surfaces can be quickly and easily cleaned—inside and outside—by one man with a wet brush, so you save additional money on maintenance.

These savings on operating costs are some of the ways PC Glass Blocks pay for themselves. In addition, they prevent damage to precision machines and goods in process, promote the comfort of workers, hence help to turn out better work—and more of it.

The many and varied uses of PC Glass Blocks are fully described and illustrated in our recently published book. We shall be glad to send you a free copy upon request. Pittsburgh Corning Corporation, 632 Duquesne Way, Pittsburgh 22, Pennsylvania.

· *Also makers of PC Foamglas Insulation* ·

PITTSBURGH PC CORNING

GLASS BLOCKS

Distributed by

PITTSBURGH PLATE GLASS COMPANY *and by W. P. Fuller & Co. on the Pacific Coast*

Pittsburgh Corning Corporation
Room 605, 632 Duquesne Way
Pittsburgh 22, Pa.

Please send along my free copy of your new book on the use of PC Glass Blocks for Industrial Buildings. It is understood that I incur no obligation.

Name_____

Address_____

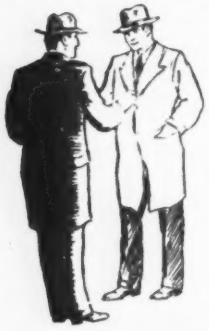
City_____ State_____

THE TEXTILE INDUSTRY IS TALKING ABOUT

DRUMMOND SOAP FLAKES!

THE SAME FEATURES OF DRUMMOND SOAP—*Plus*

EASY TO USE—SUDS BETTER!



Drummond Flakes are so easy to use! And you couldn't get a flake that suds better! Note these Drummond Soap features: high body with low alkali content . . . leaves fabrics perfectly clean with softer feel, brighter colors, and whiter whites. Try Drummond Flakes and note the difference in your fabrics. Ask for Drummond Flakes or Solid.

Want to try a sample first? Write today for free working samples. Try them on your own goods. You'll want to use Drummond all the time.

Standard Soap Co. of Camden

205 South 2nd St.
CAMDEN, N. J.

G. TANGUAY
281 Harris Ave., Woonsocket, R. I.

ROBISON

Rayon Yarns

Filament and Spun Rayon Yarns
dyed and twisted to your specifications.

ROBISON PROCESSING COMPANY
BOSTON, MASSACHUSETTS
New York Sales: 450 Seventh Ave.

erect a filament rayon plant at Tomago, N.S.W.

Of course, wool is Australia's great basic product; and imports of textiles or other commodities from Britain, the U.S., Japan, India, Europe, etc. have been thought helpful to effect balance of trade and assure the necessary overseas wool markets. The sum of £461,000 will be spent under the recent Wool Use Promotion Act to increase efficiency of wool production and to promote general consumption and use of wool. Australian sheep numbers may be expected to increase from their current level, which is the lowest since 1925. The Commonwealth has provided a wool subsidy to domestic spinners and weavers.

New Dyes and Chemicals

(*Continued from page 158*)

ors for use in soaking baths or for spraying and 15 oil- and solvent-soluble colors for application in solvents or oil solutions has been announced by United States Testing Co., Inc.

There are 24 distinctive tint shades of water-soluble tints that can be used interchangeably on silk, viscose, acetate and cuprammonium. There are also other shades developed especially for different types of yarns.

A range of seven shades of water-soluble tints and five oil-soluble tints are available for nylon.

Flocking Adhesive Has Long Life

FLOCKING ADHESIVE M-6177; United States Rubber Co., Rockefeller Center, New York.

A new synthetic-rubber adhesive announced by United States Rubber Co. for use in conjunction with textile fibers to make plush, velour, suede, and velvet surfaces is said to have longer life and more flexibility than adhesives now being used. It can be dyed any color to match the textile fibers.

The product is called Flocking Adhesive M-6177. It may be sprayed or brushed on surfaces including wood, metal, and glass.

New Dyeing Agent Retards Exhaustion

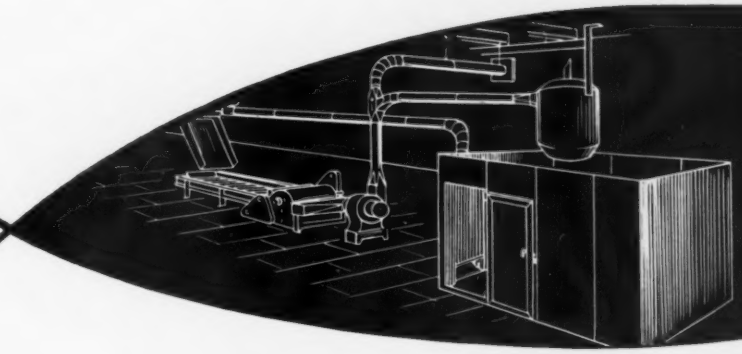
CLAVANOL; Textile Chemical Div., Dexter Chemical Corp., 819 Edgewater Rd., New York 59.

A new dyeing agent and detergent has been announced by the Textile Chemical Div. of Dexter Chemical Corp.

Clavanol, a non-ionic synthetic detergent, is available in two types: Clavanol Concentrate, which is 100%

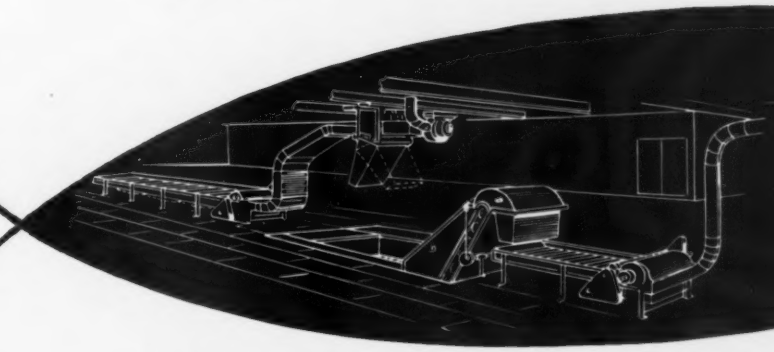
BETTER BLENDING AT LOWER COST

for woolens, carpet yarns, worsted or cotton mills using wool or synthetics



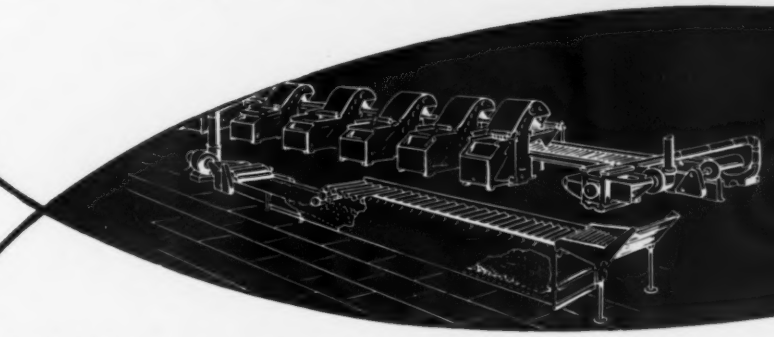
Simple Method. One Proctor Super Picker. First blending is conveyed to bin, from which it is picked up and distributed over feed table of Super Picker, where it receives secondary blend and then conveyed to card room.

STEP UP PRODUCTION . . .



Cleveland Method. After first run through Super Picker, blend is distributed over a pit feed and fed to second Super Picker, from which it is conveyed to card room.

IMPROVE BLENDING . . .



Fully Automatic System employs a number of automatic feeds with calibrated scale mechanisms, each laying one kind of stock on feed table of first Super Picker. Blend passes through re-blending box to wide Super Picker and then to card room.

In plants where Proctor individually designed blending systems, similar to those illustrated above, are in daily operation, management report truly amazing figures. These plants report making better blends with more certainty of uniform mixing and at labor savings of 40% to 70% over manual blending. It stands to reason that carefully controlled mechanical blending removes even the smallest variance that is bound to occur when the blend is laid manually. When you consider the dependable uniformity of blend and the tremendous savings in manpower made possible by these systems, you can see that the initial investment pays for itself in a very short time. These blending systems can be semi or fully automatic, depending upon individual requirements. The systems are entirely flexible and can be arranged to meet plant layout. If blending is a part of your plant operation, investigate the possibilities of the Proctor system suited to your needs. Let one of our sales engineers discuss your problem with you and then make recommendations. Write today.

PROCTOR & SCHWARTZ, INC. · PHILADELPHIA 20, PA.

BOOTH
Quality Card Clothing
Aids Your Cost Record

By developing the full efficiency of your cards, BOOTH QUALITY CARD CLOTHING makes a definite SAVING in your production costs. We suggest you try it.

A complete line including Cylinder Clothing, Doffers, Workers, Strippers, Tumblers, Fancies, Rings, Lickerins, Feed Rolls, etc.

Benjamin Booth Company
Allegheny Ave. & Janney St., Philadelphia 34, Pa.

Sterling
Ring Travelers

ASSISTANTS

Can you use an extra head? Our representatives are experienced mill men. They are in constant touch with conditions and should be able to give you valuable assistance. Talk things over with them.

D. C. Anderson, Box 629, Cedartown, Georgia
J. R. Federline, Jr., Box 968, Spartanburg, S. C.
H. B. Cabaniss, Box 188, Monroe, No. Carolina

STERLING RING TRAVELER CO.
FALL RIVER, MASS.

material, and Clavanol D, which is a solution of the concentrate. Both are soluble in warm or cold water and are reported to be resistant to lime, mild acid, and alkali. Clavanols are said to have high emulsifying properties; and, because of their non-ionic properties, they may be used in conjunction with both cationic and anionic processing agents, it is reported. They are recommended for use as a retarding agent in dyeing cotton and rayon with substantive colors and as a retarding agent in the dyeing of vat colors.

Clavanol is reportedly used with advantage in dyeing diazo colors on cotton and rayon as well as in dyeing acetate colors; it may also be used in most after-treatment operations of dyed textile goods, as well as in washing, desizing, scouring, etc.

USEFUL ACCESSORIES *for the* TEXTILE MILL

Silicone Grease

Silicone greases designed for use in lubricating bearings operating at high temperatures, announced by Dow Corning Corp., Midland, Mich., are said to have about ten times the life of high-temperature petroleum greases when operating at 350° F. The new greases used in conjunction with silicone motor insulation are reported to increase the permissible operating temperatures of motors by as much as 100° C. (180° F.) and to be an excellent solution to the problem of permanently sealed, lubricated bearings designed to last as long as the equipment is operable.

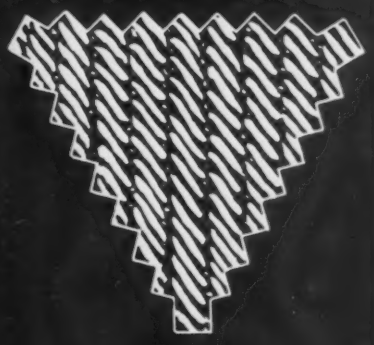
Process Controller

A processing controller designed to take full automatic control of equipment has been announced by C. J. Tagliabue Div., Portable Products Corp., Park & Nostrand Ave., Brooklyn 5. Designed for use with equipment such as dye becks, kiers, etc., which run batches and utilize a processing cycle requiring control of time and temperature, the controller is reported to require only that the operator push the starting button. The instrument keeps a chart record of each process cycle. After the starting button is pushed, the controller raises the temperature to the desired degree, holds the temperature for the proper time, and cools the interior. A set of signal lights indicate the phases of each cycle.

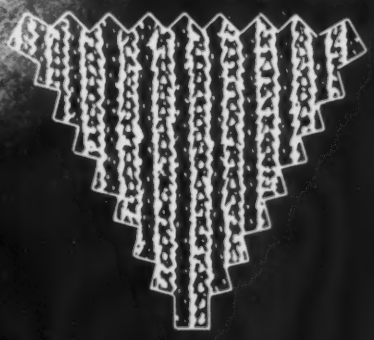
Strapping Tool

A lighter-weight, streamlined, combination steel-strapping tool has been announced by Acme Steel Co., 2840 Archer Ave., Chicago 8. Called the No. 3 Steel-

LEADERSHIP IN QUALITY FOR 65 YEARS



SOLVAY
TRADE MARK REG. U. S. PAT. OFF.



SOLVAY PRODUCTS FOR THE TEXTILE INDUSTRY

Ammonium Chloride
Caustic Potash
Caustic Soda
Liquid Chlorine
Potassium Carbonate
Soda Ash
Sodium Nitrite
Calcium Chloride

SOLVAY SALES CORPORATION *Alkalies and Chemical Products Manufactured by The Solvay Process Company* 40 Rector Street, New York 6, N. Y.

Your Own Business in Puerto Rico:

Screen Printing on Textiles

Because our economic analysts state that this duty-free industry will flourish in nearby Puerto Rico, we are prepared to assist in its establishment. We can build to lease (at an extremely low rental), or sell, aid in financing and can train your workers at our expense, drawing from an abundant supply of reasonable labor.

★ *We are a government corporation interested in encouraging only those industries which analysis shows will have an attractive prospect of success.*

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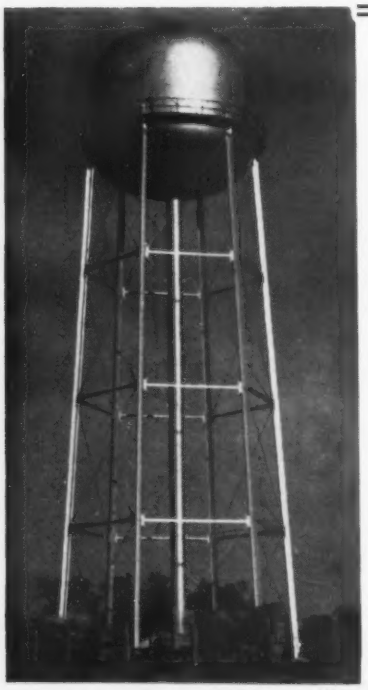
PUERTO RICO INDUSTRIAL DEVELOPMENT COMPANY

BOX 2672, SAN JUAN, P. R.



TANKS

For over eighty years the Southern textile industry has looked to Cole for design, fabrication and erection of elevated tanks for sprinkler and general service.

Also for the design and fabrication of bleaching kiers, starch kettles, and vats and vessels of all types—in stainless steel, Monel metal, special alloy steels and kindred materials.

Our experienced engineering department is at your service. Write for our general catalog—"Tank Talk."

R.D. COLE MFG. CO. ESTABLISHED 1854

Newnan Ga.

strapper, the new tool weighs 6¾ lb., which is said to make it easy to handle, either mounted or unmounted. It can be operated on a flat surface of just 5 in. width, which is claimed to be a welcome feature to those who ship narrow packages or bundles.

The tool has two levers, one for tensioning and another for sealing and cutting the strap. Seals are automatically fed from a magazine into the sealer jaws; the magazine holds a clip of 100 seals. A strap retainer holds the cut-off end of strap for the next threading operation.

Tensometer, Densimeter

A new Tensometer for measuring tension in warping, winding, or quilling has been announced by Sipp-Eastwood Corp., Keen & Summers Sts., Paterson, N. J. The Tensometer is made in handy pocket size.

A new Densimeter designed to measure the density of yarn wound on cops, quills, spools and other packages, has also been announced.

High-Speed Barrel Loader

A combination elevating and unloading machine built by Revolvator Co., North Bergen, N. J., features a standard motor hoist unit with motor and magnetic brake in one sealed unit and all shafts running in oil on ball and tapered roller bearings. Outboard end of shaft is carried on self-aligning precision ball bearings. The machine can be made portable by equipping the frame with wheels, if desired.

Plugging Switches

A new line of oiltight and dustproof plugging switches announced by General Electric Co., Schenectady, N. Y. are designed to remove plugging power from a motor at the correct moment to keep the motor from restarting in the reverse direction. Contacts are of silver, and reportedly can handle directly the coil current of a 150-amp. contactor, thus eliminating interlocking relays on starting panels in most applications. The switches are provided with grease-packed ball bearings for operating the shaft and magnet assembly. A lockout device can be provided; maximum continuous-rotating speed is 1,800 r.p.m.

Humidity Indicator

"Hygroink," a liquid which, after drying, reportedly changes color with humidity, has been announced by Eljay Enterprises, Box 891, Newark 1, N. J. Hygroink may be painted, sprayed, or printed on paper, cloth, metal, or similar surfaces. The color change is said to be distinct, definite, and reversible, being a brilliant blue-green when dry and pink when moist.

Twin-Unit Arc Welder

A new twin-unit, outdoor, a.c. arc welder in a single enclosure has been announced by General Electric Co. The two circuits in the welder can be used simultaneously and independently with ⅛-in. electrodes, it is reported, or can be

PENN SALT

H_2ydrogen per O_2xide

Reg. U. S. Pat. Off.

does a two-in-one job on these

In the manufacture of woven cotton colored yarn materials such as shirtings or chambrays, Pennsalt Hydrogen Peroxide performs a dual function: it brings up backgrounds to sparkling whiteness, and it develops the vat color to a more insoluble state.

Textile manufacturers find it an ideal bleaching agent for wool, silk, rayon, cotton yarns and woven cotton fabrics. That's because Pennsalt H_2O_2 is

SAFE — soft handle and high tensile strength
ADAPTABLE — to modern bleaching methods
ECONOMICAL — on basis of overall costs
SUITABLE — for all bleaching problems

Pennsalt Hydrogen Peroxide is furnished in 100 volume and 130 volume strengths in 120 lb. carboys and 265 lb. drums. Our technologists will gladly aid you with your bleaching problems. Consult them, or write to us direct for specific information about H_2O_2 and other Pennsalt products.

OTHER PENNSALT CHEMICAL PRODUCTS USED IN THE TEXTILE INDUSTRY:

Caustic Soda • Soda Ash • Sulphuric Acid • Hydrochloric Acid • Chlorine • Perchloron* • Sodium Hypochlorite • Chloride of Lime • Bleaching Powder • Carbon Bisulphide • Ammonium Persulphate • Potassium Persulphate • Anhydrous and Aqua Ammonia.

*Reg. U. S. Pat. Off.

PENNSYLVANIA SALT MANUFACTURING COMPANY

1000 WIDENER BUILDING, PHILADELPHIA 7, PA.

New York • Chicago • St. Louis • Pittsburgh • Cincinnati • Wyandotte
Tacoma • Portland, Ore.

Because the Cores are of Steel or Aluminum they're called

JENKINS' METALKOR

(Reg. U. S. Pat Office)

BRUSHES

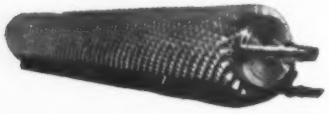
•

There is no comparison between the efficiency and life of textile brushes with wooden cores and Jenkins' brushes, with cores of aluminum or cold drawn steel, and nylon bristle, wound in place by Jenkins' patented process to resist moisture and reduce wear.

•

THE METAL CORES don't sag or split, and can be repeatedly refilled with bristle as it becomes necessary.

NYLON BRISTLE is impervious to moisture, retaining its shape and elasticity for years. Flat copper wire and special cement are used to hold the bristle in place until it needs replacement.



JENKINS' TEXTILE BRUSHES INCLUDE:

- Furnisher Brushes
- Flock Brushes
- Raising Brushes
- Laying Brushes
- Clothroom Brushes
- With nylon or natural bristle

Ask for our Catalog of Metal Core Brushes

M. W. JENKINS' SONS

INCORPORATED

Cedar Grove, Essex County, N. J.

Since 1877 Manufacturers of Industrial Brushes of all types.

combined into one circuit for heavy welding with ⅜-in. electrodes. The units have a current range of 90 to 270 amp. when used singly and from 180 to 540 amp. when operated in parallel. Only one power-line circuit to the unit is required. Protection against rain, snow, and sleet is provided by dripproof construction of all top openings and by a sealed window over the current indicators.

Electronic Multiplier

An electronic multiplier has been announced by International Business Machines Corp., 590 Madison Ave., New York 22. The multiplier is designed to reduce greatly the time of multiplying in large volume; it reportedly can multiply six digits by six digits and punch 12 digit answers in cards at the rate of 100 a minute. The cards, already punched with the figures to be multiplied, pass through the machine in a steady stream.

Heavy-Duty Apron

A new heavy-duty, oil-proof industrial apron made with Ameripol synthetic rubber has been announced by the B. F. Goodrich Co., Akron, Ohio. The apron size is 34x47 in. It weighs 1½ lb., it is hemmed throughout, and it is fitted with four grommets.

Corrosion-Resisting Alloys

Two new corrosion- resistant metals, Chlorimet No. 2 and Chlorimet No. 3 have been announced by Duriron Co., Inc., Dayton, Ohio. Chlorimet No. 2 consists primarily of nickel and molybdenum, which are said to combine to give an alloy with excellent mechanical properties and resistance to the corrosive action of a great many acids. Chlorimet No. 3 consists primarily of nickel, chromium, and molybdenum, the combination of which reportedly gives the alloy excellent mechanical properties and unusual resistance to most acids, particularly under oxidizing conditions.

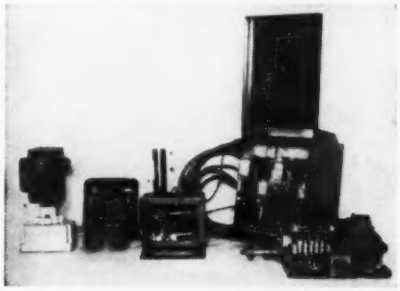
Air Diffusers

Air diffusers, featuring new, simplified, lightweight construction of the air-volume damper, have been announced by W. B. Conner Engineering Corp., 114 E. 32nd St., New York 16. The number of parts have been reduced and aluminum construction adopted throughout, which is said to lessen weight and increase efficiency without sacrificing ruggedness and dependability.

Weather-Proof Motors

A complete line of outdoor, weatherproof, totally enclosed motors in sizes ranging up to and above 2,000 hp. has been announced by Allis-Chalmers Mfg. Co., Milwaukee, Wis. Principal change in the new line of motors in the larger ratings is a complete redesign of the ventilation heat-transfer system. All air passages are said to be practically self cleaning, and pockets in which water or liquid might be trapped have been eliminated. Air passage tubes

DO YOU NEED AUTOMATIC MACHINERY OR CONTROLS?



Typical O'Connor "Registration Control"

Electronic and vacuum tubes *combined* with machine design offer increased control, coordination and accuracy.

Mechanical sensitivities and motion never before possible are becoming commonplace through the use of electronics.

We originate, fabricate, and install practical equipment to solve your production machinery problems by applied electronics.

We will make a complete survey of the opportunities for savings in your plant and render a written report or details of applications.

Write us today to be sure that we will be able to check up on your plant the next time we are in your neighborhood.

Complete "Mechanical-Electronic" survey of your plant $100.00

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mechanical electronics

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WEST ORANGE NEW JERSEY

For Uniformity in Fabric Quality
Use Hooker Uniform Quality Chemicals

YOUR PRODUCTS of tomorrow depend upon your raw materials of today. To insure maintenance of your own high quality, you can standardize your processes by using Hooker Chemicals. In this way you will be assured of avoiding costly adjustments in your operations.

Occasional changes in analysis of Hooker Chemicals mean improvements in quality and better adaptability to your processes. One such improvement is the recent change in the iron content of Hooker Sodium Sulfide from 15 ppm to 8 ppm. Our strict control of quality is your assurance of uniform, high quality fabrics.

From the many Hooker products used in the Textile Industry, a few are briefly described below. More information in the form of Technical Data Sheets is available when requested on your business letterhead. Hooker's Technical Staff will also help you on problems involving Hooker Chemicals in your particular operations.

PRODUCT *Chemical Formula; Molecular Weight*	HOOKER SPECIFICATIONS	SUGGESTED USES
Aluminum Chloride, Anhydrous $AlCl_3$: 133.3	Aluminum Chloride ..... 98.5% Min. Iron ..... 0.05% Max.	Catalyst in synthesis of dyestuffs and intermediates.
Antimony Trichloride, Anhydrous $SbCl_3$: 228.1	Antimony Trichloride ..... 99% Min. Iron and Arsenic ..... 1% Max. Lead 0%	Catalyst in organic synthesis; mordant in textile printing. Moisture and fire-proofing textile.
Benzoic Acid C_6H_5COOH: 122.1	Benzoic Acid ..... 99.3% Min.	Manufacture of dyes. Mordant.
Benzoate Soda, Tech. C_6H_5COONa: 144.0	Benzoate of Soda ..... 99% Min.	Preservative in sizes.
CP-40 (42% Chlorinated Paraffin) $C_{25}H_{46.5}Cl_{7.5}$: 625	Chlorine Content ..... 42 ± 1% Viscosity at 210°F ..... 160 to 180 SUS Acidity as HCl ..... 0.006% Max. Color, Union Colorimeter, ASTM ..... 1.5 to 2.5 Thermal Stability ..... 0.15% HCl Max.	Water-proofing and fire-proofing textiles.
CP-70 (72% Chlorinated Paraffin) $C_{24}H_{29}Cl_{21}$: 1063	Chlorine Content ..... 71 ± 2% Iron ..... 0.1% Max. Acid Number, mg KOH/gm ..... 0.50 Max. Softening Range ..... 90 to 100°C	Water-proofing and fire-proofing textiles.
Lauryl Pyridinium Chloride $C_5H_5N(C_{12.6}H_{26.2})Cl$: 292	Semi-crystalline solid (active ingredient) . 85% Min. 30% Water Solution (active ingredient) . 26% Min.	Cationic surface-active agent for textile processing and germicidal specialties.
Sodium Sulfhydrate NaSH: 56.1	NaSH ..... 70 to 72% Na_2S ..... 1 to 2% NaCl ..... 1% Max. Na_2SO_3, $NaHCO_3$ ..... 1% Max. Fe ..... 5 ppm. Max. Cu, Ni, Cr, Mn, Pb ..... 1 ppm. Max. Water of crystallization ..... 28 to 26%	Desulfurizing rayon; calico printing; in sulfur dye baths.
Sodium Sulfide Na_2S: 78.1	Na_2S ..... 60 to 62% NaCl ..... 1.5% Max. Other Na Salts ..... 2.0% Max. Fe ..... 8 ppm. Max. Cu, Ni, Cr, Mn, Pb ..... 1 ppm. Max. Water of crystallization ..... 36.5 to 34.5%	Desulfurizing rayon; calico printing; in sulfur dye baths.

HOOKER ELECTROCHEMICAL COMPANY

2420

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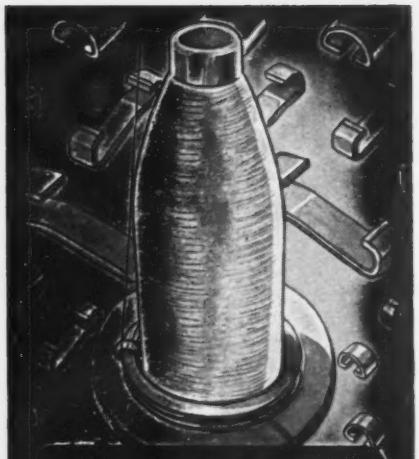
New York, N.Y. Wilmington, Calif. Tacoma, Wash.

HOOKER CHEMICALS

Chlorine **Muriatic Acid** **Caustic Soda** **Paradichlorbenzene**



DARY

RING TRAVELERS

DARY Ring's the Bell For Performance!

DARY RING TRAVELERS in all of their countless spinning and twisting jobs ALWAYS RING THE BELL FOR PERFORMANCE!

USE DARY RING TRAVELERS confidently with any type or count of yarn and be sure of consistent uniformity and wearability at maximum spindle speeds.

There's a friendly DARY representative ready to serve you at any time . . . enlist his help the next time you have a spinning or twisting problem!

DARY

★ PROCESSED ★

SYMBOL OF SUPERIORITY

The DARY RING TRAVELER CO.

TAUNTON, MASSACHUSETTS

JOHN E. HUMPHRIES, BOX [illegible], GREENVILLE, S. C.

JOHN H. O'NEIL, BOX 720, ATLANTA, GA.

H. REID LOCKMAN, BOX [illegible], SPARTANBURG, S. C.

reportedly can be cleaned easily with a brush or an air or water hose.

Live Centers

Designed to handle heavier loads at higher speeds, a line of live centers equipped with matched and preloaded roller bearings has been announced by Holub Industries, Inc., 413 DeKalb Ave., Sycamore, Ill.

The design reportedly assures extreme accuracy by holding eccentricity or run-out of point to 0.0002 in., both free and under load. Since the bearings are preloaded, there is said to be no chattering. A heavy-duty grease seal is said to resist wear from metal chips and prevent the entrance of foreign matter, thereby eliminating rapid wear.

Filing Cabinets

A line of filing cabinets available in eleven models, with or without general locks, and in suspension and non-suspension types, has been announced by Lyon Metal Products, Inc., Aurora, Ill. The cabinets have rounded corners on drawers and cross-rails, drawers mounted on six ball bearings, and double stops on drawers. In the legal size, two-, three-, and four-drawer files 17½ in. wide are available.

Gantry Crane

Portability, ease in handling, and flexibility for many varied lifting services are the features of a new gantry crane announced by Industrial Eqpt. Co., 315 N. Ada St., Chicago 44. Of 1-ton capacity, and reportedly with generous safety factor and minimum gantry weight, the crane is said to have a broad variety of uses at loading platforms and docks and in plants and machine shops.

Regulating Valves

A new line of single-seated, balanced-diaphragm regulating valves for process industries and power plants has been announced by Leslie Co., 188 Delafield Avenue, Lyndhurst, N. Y.

Made with cast-iron, bronze, and steel bodies for steam, air, or gas pressures up to 1,000 psi., the valves are designed to be actuated by standard pressure or temperature instruments or controllers using 20-psi. air or clean water.

The new valves, designated as Class D-1 (cast-iron or bronze) and Class DS-1 (steel), are normally supplied with the valve in closed position, opening with diaphragm pressure; by use of a new reversing superstructure, the valve reportedly can be changed easily to a normally open position, closing with diaphragm pressure.

Marking Chalk

A new marking chalk that reportedly will not set when wetted by water, steam, or chemicals, has been announced by Uxbridge Worsted Company. It will wash out easily in warm water, bleach, cold scour, or synthetic scour; and in most cases, it will wash out in cold water, it is stated. It allegedly will not glaze over and become

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Full Staff of competent engineers and complete manufacturing facilities.

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In **the modern textile laboratory** chemists are called upon continually to effect improvements in the processing as well as in the appearance, durability, and performance of yarns and fabrics.

New solutions to these problems are possible with cationic emulsions and dispersions prepared with the Armeens and Armacs—Armour's high molecular weight aliphatic amines and amine acetates.

Such cationic emulsions or dispersions are substantive to cellulose and the oil phase can be exhausted on to the fabric. The soluble amine salts such as the acetates and the hydrochlorides are effective penetrants and can be fixed or insolubilized in the fiber by double decomposition with the proper salt.

The pH of these emulsions is slightly on the acid side. Calcium, magnesium, aluminum and other metallic ions have little effect upon their stability. Compatibility is determined by the type of anion.

Write today for our new booklets, "The Armeens and Armacs as Cationic Emulsifiers" and "The Armeen Salts—Penetrants or Repellents."

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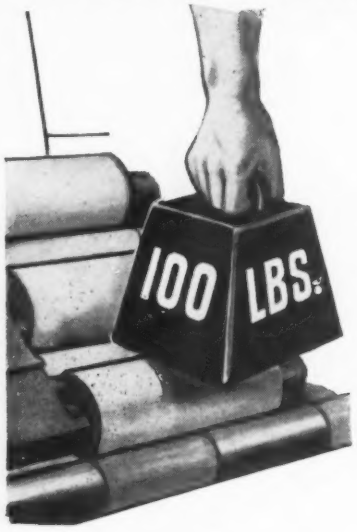

ONE WAY TO SLOW DOWN YOUR TOP ROLLS

Another way is to continue to use spinning and roving saddles that are badly worn. In either case the result is poor quality yarn.

Saddles should be inspected at regular intervals. Even the best won't wear forever and worn saddles will not only slow down your top rolls, but will also wear them. In addition, proper weight ratios will not be maintained.

Replace with DIXON saddles

"It Costs So Little and Saves So Much"

Jump Saddle to Weight Front & Back Rolls Only

DIXON LUBRICATING SADDLE CO.
Established 1876
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Sole Manufacturers of
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LUBRICATING SADDLES

hard to use. The chalk is manufactured in nine distinctive colors for sale under the trade name "Easy-Rid." Matthews Equipment Co., Providence, R. I., is distributor.

Temperature Regulators

A new type of self-contained, direct-operated temperature regulator for gas control to process heating, designated as Class MG-2, has been announced by Leslie Co., 187 Delafield Ave., Lyndhurst, N. J.

Supplied with screwed ends in $\frac{3}{8}$-, $\frac{1}{2}$-, and $\frac{3}{4}$-in. sizes, the bronze-body regulators operate over standard temperature ranges from 20° to 600° F. at inlet pressures up to 25 lb. per sq. in. maximum. They are designed specifically for use on equipment where accurate gas-fired control is desired, where product quality is dependent on temperature control, and where economy of operation is important. Various bulbs and bulb-casing materials are available, and the liquid-expansion-type thermostatic element has a piston guided bellows. No attention is required during operation, it is said, and fuel savings of 15 to 30% can reportedly be expected.

CO_2 Fire Extinguisher

A light-weight trigger-type CO_2 fire extinguisher with a total weight of less than 12 lb. has been announced by American-LaFrance-Foamite Corp., Elmira, N. Y. Called the Alfco Speedex, the extinguisher contains $3\frac{3}{8}$ lb. of CO_2 which, upon release, expands to 450 times its contained volume. Size of the extinguisher is $3\frac{7}{16}$ in. in diameter, and 22 in. in overall length.

Paint-Brush Cleaner

A paint-brush cleaner said to be equally efficient for cleaning hardened paint, lacquer, varnish, shellac, or enamel has been announced by Devoe & Raynolds Co., Inc., 44th St. & First Ave., New York 17. The cleaner is reported to be powerful enough to clean right down to the heel of the brush, yet to be safe to use and non-injurious to hog bristle or nylon, setting compound, or painters' hands.

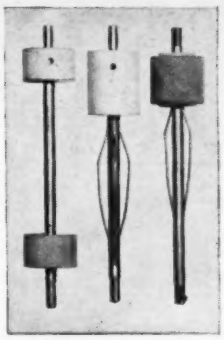
Concrete-Floor Paint

Rubbermastic concrete-floor paint, made from gilsonite and reported to dry in four hours to an enamel-like finish, has been announced by Tiz-Nu Corp., 673 Colorado St., Los Angeles, Calif. The new paint is said to eliminate the necessity for etching and priming prior to painting; to be completely water proof; and to resist acids, alkalis, heat, electrolysis, weather, and abrasion. Several colors are available.

Hard-Facing Electrode

High-carbon electrodes for building up worn steel parts by welding with low-voltage a.c. transformers, as well as with d.c., have been announced by The Lincoln Electric Co., Cleveland, Ohio.

The new electrodes, designated "Hardweld 50 A.C." and "Hardweld 100 A.C.," have a heavily extruded shielded-arc-type coating and are said to produce flat, smooth beads and deposits which can be hot-forged.



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"WAYNE" WINDER
and Redraw Spindles

Hard fibre tips for all types of spindles —require no oiling—renewable at little cost. Use them for cleaner yarn and better wound bobbins. Write for sample of these and other Wayne money-saving textile machine parts and supplies.
Spindles of all types. Wood, head, steel head, cork covered heads and hardened steel top tip spindles. Let us send you a sample of the type you prefer. Save money by buying from Wayne.

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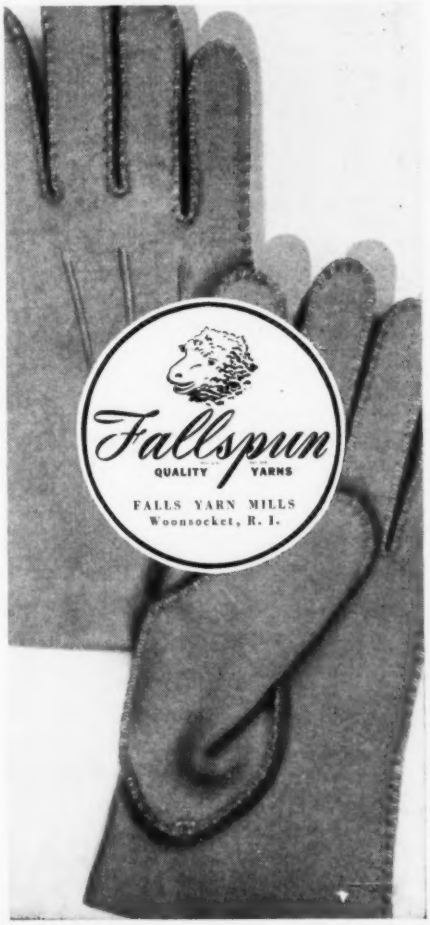

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A correct application of this Sylvania Finish for Textiles

- provides a finish of distinguished character
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- stabilizes shrinkage and stretching
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These Qualities are then a Permanent Characteristic of the Finished Textile and remain Durable Through Repeated Laundering

Write for technical booklet giving complete directions for uses and application.

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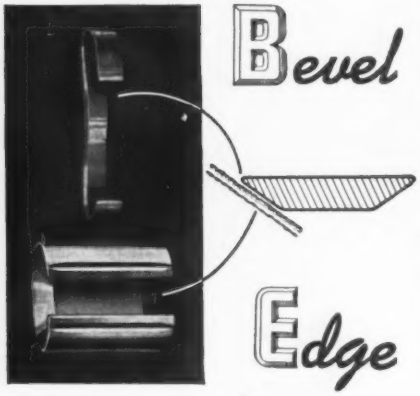
"U. S." offers a COMPLETE Traveler Service—a complete line suited to every fibre and operation—complete engineering service assisting you in traveler selection and maintenance for maximum spinning and twisting production.



Exclusive "Bevel-Edge" design offers numerous advantages

These famous anti-friction travelers yield the following benefits:

1. **Less loading up of travelers on cotton.**
2. **Less fly waste on woolen.**
3. **Minimizes split ends on rayon, and silk.**
4. **Much lower end breakage—frequently 8 to 10 fewer per hour.**
5. **More uniform yarn.**

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Loomfixers' MANUAL

WOOL SECTION

Chapter XIX (cont.)

FILLING FEELERS

By EUGENE P. SCHREMP

C&K No. 11 FEELER. Fig W51 illustrates a Crompton & Knowles side-slip feeler known as the No. 11. Vertical adjustment is made by raising or lowering the stand, but lateral adjustment should also be made at the same time as the one bolt controls both adjustments. The feeler case should be at right angles to the lay.

The feeler tip should contact the bobbin about 1¼ in. from the butt. With the lay at front center, set the feeler so that the tip will slide about 1 in. on an empty bobbin. At this point, the end of the feeler blade should throw the trip tumbler to its extreme back position, where the chopper will contact it on its downward stroke. With the transfer down, there should be a little clearance between the end of the transfer on the upright angle of the filling slide.

This feeler can be adjusted by swinging it to the right to cause the blade to slide more freely, or to the left if the indication is too early. If the feeler is set too close to the trip tumbler, the magazine may continue to transfer full bobbins after a change.

Do not use a heavy oil which will become gummy and cause the feeler to operate improperly.

TIMING THE FILLING FEELER. Success in transferring filling depends on split-second timing. Before making any adjustments, a fixer should be certain that all timing points are understood. To adjust and time the detector cam and lever, illustrated in Fig. W52, stop the loom with the shuttle at the magazine side. (This is very important. Sometimes after a fixer retimes a loom the magazine acts as though it were bewitched, and only after much work does he find that the retiming was done with the loom ready to pick from the box side.) With the loom at back center, turn the feeler cam so that it raises the chopper to its highest point and then tighten the set screws.

Set the stud in the cam lever in

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that require
ASBESTOS FILLING
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For plain, metallic or reinforced asbestos yarn we can supply Cop & Bobbin Winders to produce maximum yardage and unifomity.

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HOW WOULD YOU PRINT THIS PATTERN ON ALL ACETATE NINON ?

Executives of the Colonial Print Works Division of Brewster Finishing Company knew there would be grave danger of cracking the fabric if they attempted to print this pattern with vat dyes in starch on acetate ninon. Therefore, they chose the far simpler, less hazardous method of pigment printing with low-crock Aridye* Pigment Colors.

Thousands of yards of this attractive pattern were printed in each of the four color combinations illustrated with no cracking or other damage to the delicate acetate ninon fabric, and with no impairment of the hand. Typical of the procedure followed by Colonial is that for the wine, rose, and grey color combination shown above. Formulas for that color combination are: WINE—2 parts Aridye Red 4325; 1 part Aridye Violet LV3R 4610; cut 1½: 1 with Aridye Clear 6214. ROSE—1 part Aridye Red 4325; 1 part Violet LV3R 4610; cut 1:9. DARK GREY—3½ parts Aridye Black FK 4214; 4½ parts Aridye Blue LC2R 4724; cut 1:6. LIGHT GREY—6½ parts Aridye Black FK 4214; 9½ parts Aridye Blue LC2R 4724; cut 1:45.

After printing, the fabric was merely dried and finished. Note the brilliancy of shades and sharpness of mark. Fastness to washing, drycleaning, sunlight, and crocking met or exceeded all requirements.

Because of results such as these, Colonial and other progressive printers are turning more and more to the use of Aridye Pigment Colors. An Interchemical technical representative may be able to help you solve your printing problems. Write to Interchemical Corporation, Textile Colors Division, Fair Lawn, New Jersey.

*Reg. U. S. Pat. Off.

CHECK THESE EIGHT ADVANTAGES

Sharpness of Mark • Exceptional Fastness to Sunlight
Uniformity of Shade • Fastness to Washing
Bright Colors • Economy
Ease of Application • No Impairment of Hand

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middle of the slot, as a starting point. This adjustment controls the total sweep of the magazine indicator finger. Raise or lower the give-way on the threaded detector rod so that the bottom of the detector-rod head slot is ½ in. from the feeler-bed stand. After tightening the lock nut on the detector rod, make sure that the rod and chopper move freely, because any binding will cause the magazine to operate improperly.

Adjust the rod head on the connector from the chopper to the double depressing lever so that there is about $\frac{1}{16}$-in. play between the depressor finger and the lower projection on the upright cradle slide. Turn the crankshaft over slowly by hand so that the pin will be under the chopper, causing the depressor finger to lift the upright cradle slide to its highest point. The lay will be approximately at top center.

DEPRESSOR FINGER CLEARANCE. Clearance between the depressor finger and the upper and lower projections of the upright slide should be the same. This upward movement of the slide will tip the cradle and place a bobbin in it. If there is not the same amount of play at top and bottom, determine which has more or less sweep on the depressor fingers. If there is too much sweep, loosen the stud in the cam lever and move it closer to the cam, decreasing the sweep of the depressor arm. Moving the stud toward the end of the cam lever increases the sweep. A slight change in the position of the stud causes quite a difference in the sweep of the depressor lever. After the sweep is equalized at top and bottom, turn the crankshaft back and forth to see that the slide raises and lowers properly. The up-and-down movement will cause the cradle to drop the bobbins in the give-way.

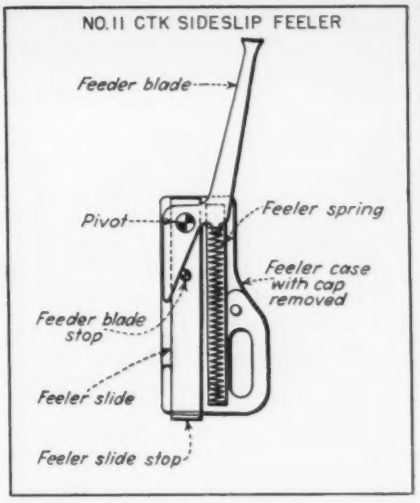

Fig. W51. No. 11 feeler can be positioned by loosening only one bolt.

Timing the feeler must be done after all sweep adjustments are made. Always remember that the sweep cannot be changed without affecting the time, but changing the time of the detector cam does not affect the sweep.

SETTING THE CAM. To time the filling feeler, bring the lay to perfect front center, with the cams ready to pick from the magazine side. Pull the indicator pin out to obtain clear vision through the hole in the detector stand to the chopper. Loosen the set screws in the cam on the bottom shaft and turn the cam, with the lay still at front center, until the under side of the chopper lever covers the top half of the hole carrying the indicator pin, as illustrated in Fig. W53, and then tighten the cam. If the cam was set properly, with the lay at back center, there is only a very slight change at front center.

It is important, when starting to set

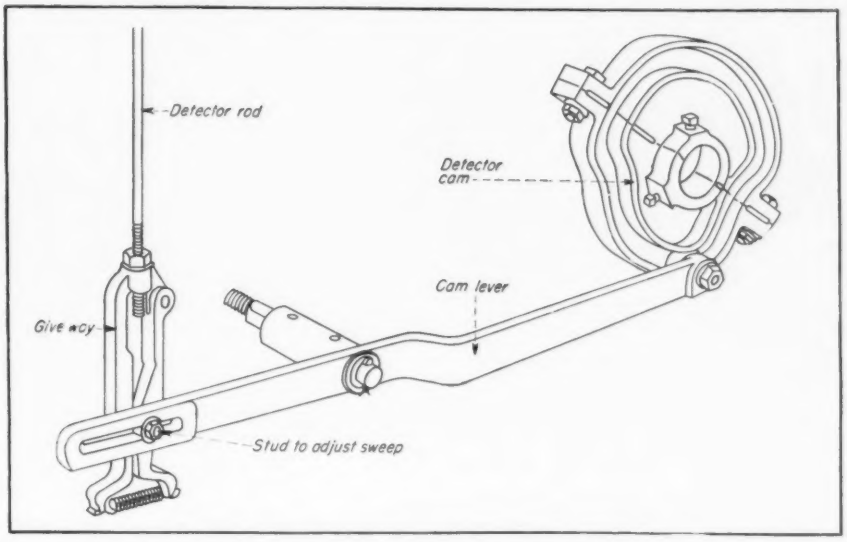

Fig. W52. Set cam to put chopper at highest point, with lay at back center.

More seconds are produced during such periods (week-end shut downs) than in a normal day's run.

ALBERT T. RUSSELL, in "COTTON," NOVEMBER 1946

•

When humidity in knitting mills with modern machines having close tolerances is allowed to drop over the week-end, the result on Monday morning is trouble for the fixers and loss of production and money. Mr. Russell in an article from "Cotton", quoted above, points this out.

AIR-PERME-ATOR

(Dry humidification) 500 times finer than spray, maintains an even percentage of relative humidity, regardless of temperature fluctuations. It eliminates static, does much to prevent broken ends, split yarns, and uneven tensions, which add their share to the fixers' troubles, when the power goes on after the week-end stop.

We have much significant information about results obtained by the use of Air-Perme-Ator (dry humidification) in knitting and other textile plants. Won't you let us give it to you?

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AIR-PERME-ATOR

Systems are efficient and economical both to install and to operate. They are being used by many of America's leading textile manufacturers.

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Write for illustrated folder "Air-Perme-Ator and Tricot Machines—A Production Team"—or literature describing the type of equipment in which you are interested.

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Yes! . . . they come, they see . . . and they locate in Missouri . . . state of opportunity!

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Missouri citizens are friendly and cooperative. A new, up-to-times Constitution favors industry. Taxes are low. Skilled labor is plentiful. There is every mode of excellent transportation . . . rich markets . . . a wealth of natural resources . . . low-cost power . . . and 350 communities with the Welcome mat out and ready with friendship and cooperation. Now is the time to find out about YOUR opportunities in the State of Missouri.

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52

the sweep and the time, that in the first operation the cam be set so that the detector-rod head is raised to its highest point. There are two high points on the detector cam, but one will raise the rod about $\frac{3}{8}$ in. higher than the other. Extreme caution should be observed that the cam is set right at the starting point. The importance of proper timing cannot be over-emphasized. If the detector cam is set early, the chopper hits the pin before the bobbin pushes the pin out of the way, causing the detector to indicate and to change the bobbin before the yarn is depleted; if the timing is late, the chopper hits the pin as the lay swings back, causing the same trouble.

SETTING INDICATOR PIN. It should be understood that when the detector is timed properly, the chopper, in its downward stroke, just misses the pin as it is withdrawn by the forward-moving lay. This operation is repeated until the filling is depleted and the feeler tip slides on the bare wood of the bobbin, leaving the indicator pin in the path of the chopper. The resulting lever action of the chopper on the pin acts as a fulcrum setting the magazine in a position to transfer.

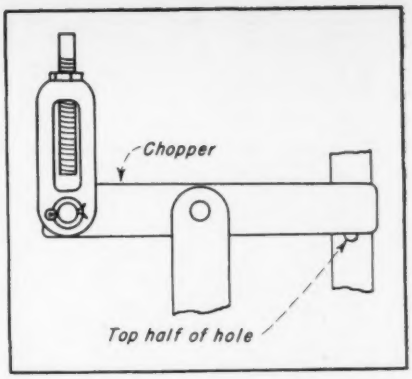


Fig. W53. Have bottom of chopper cover top of indicator-pin hole, with lay at front center.

The indicator pin is adjusted by pushing the chopper down, with the pin withdrawn, so that the pin contacts the inside of the chopper blade. Loosen the arm on the indicator plunger shaft and adjust so that there is $\frac{1}{16}$ in. between the top of the arm and the back of the feeler case. In a running position, the pin will just enter the hole on the other side of the feeler stand and there will be no danger of the chopper slipping off the end of the pin. If the pin is set in too far, unnecessary transferring will result.

BRITISH WOOL Developments Look to Finer Fabrics

HIGHLIGHTS: *Three-dimensional effects obtained by napping printed felts—"Chlorzymed" wool featured for household and garment uses—Fine yarns up to 100s spun by aid of alginate and other carrier yarns.*

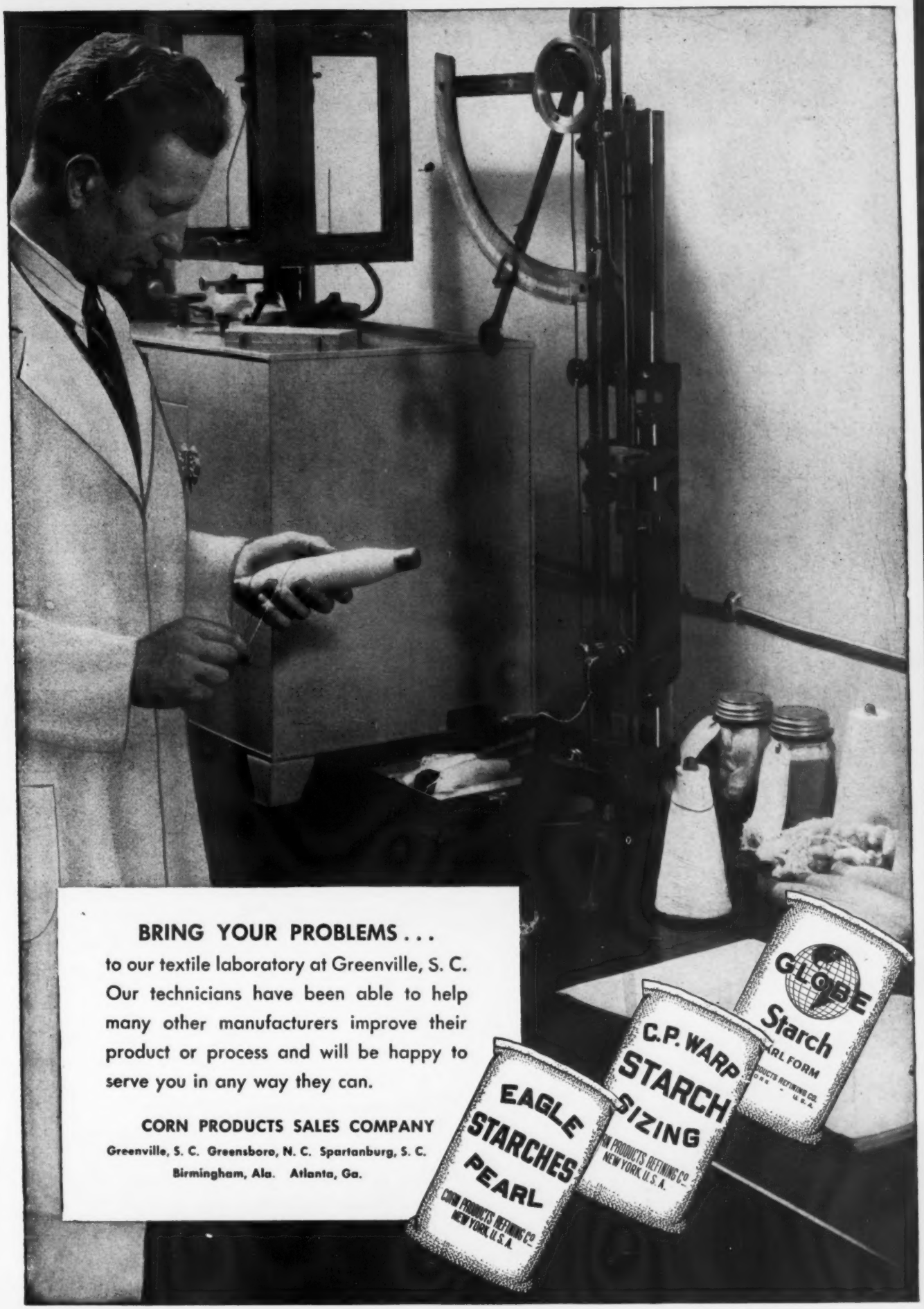
By HENRY PHILLIPS, D.Sc.
Wool Industries Research Association

WOOL GAINED, and maintains, its prominent position as a textile fiber because it felts, it was brought out during the several meetings of the Society of Dyers & Colorists at Leeds University, Leeds, England, and in the adjacent exhibit of the International Wool Secretariat. A few hours in a fulling machine will convert a thin woolen into a substantial, warm, and wind-proof fabric. Fulling is a much more economical process than that of obtaining thickness by elaboration of weaving or knitting. Prolonged fulling will produce a felt, a typical wool product.

THREE-DIMENSIONAL DESIGNS. Felts have long been made from carded web and woven woolens; but, at the exhibition, felts were displayed which were produced from circular webs plain-knitted from woolen yarns. These felts weighed up to 26 oz. per yd., the shrinkage in area during fulling being 65 to 70%. They had been fulled in tubular form either in acid or soap, depending on the thickness and finish desired, and had been split for brushing, cutting, pressing, and dry blowing. Figured felts were displayed which could be utilized for upholstery and furnishings. One printed felt was made particularly attractive by raising the surface after printing, which blurred the outline of the design, causing it to stand out and appear to be in three dimensions.

Demonstrating the virtues of a non-felting wool as a filling for washable cushions and quilts, one exhibit fea-

(Continued on page 246)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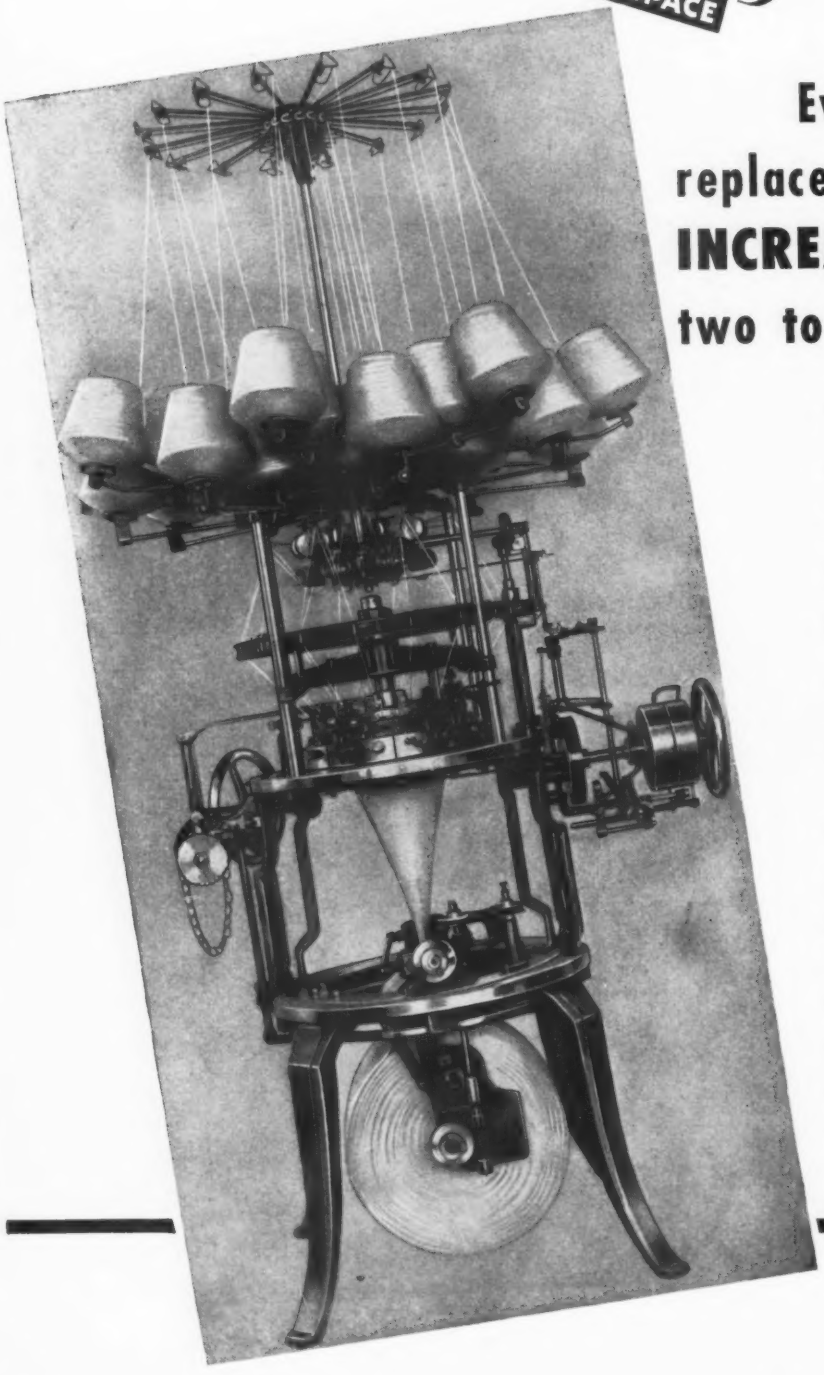
8-FEED MACHINE { PRODUCTION SAME FLOOR SPACE } WILDMAN MACHINE



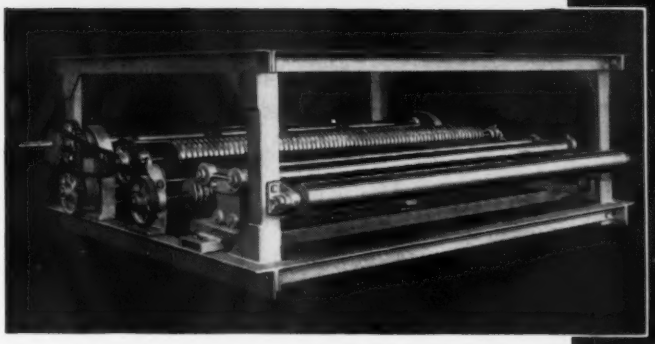
Every WILDMAN that replaces an 8-feed machine INCREASES PRODUCTION two to three TIMES

That's the comparative score as leading knitting mills throughout the country have found. Without requiring even an extra inch of floor space, and using only about a third more power, the

WILDMAN MULTIPLE-FEED RIB MACHINE

will deliver two to three times the volume that that floor space has ever produced before. A simple, direct provable statement. Besides, this machine makes a finer, cleaner, more uniform product, gives trouble-free performance and offers many special and exclusive operational advantages.

WILDMAN MFG. CO., Norristown, Pa.



How to CONTINUOUSLY OPEN AND EXTRACT CLOTH AT ANY REQUIRED PRODUCTION RATE

Pictured on this page are the new Hunter contributions to faster and continuous cloth opening and extracting—at any required speed and with a high percentage of moisture removed. With the Hunter Ceiling Scutcher and Hunter Model G Pneumatic Squeeze Rolls and variable speed control, the opening and extracting operation is continuous—with one man's labor, with only 7½ H.P.—and with extraction down to 50% to 60% on the bone-dry basis.

The Hunter Scutcher and Model G Pneumatic Squeeze Rolls may also be put into a continuous range with the new Hunter Tenter or Carbonizing Dryers, which affords the mill continuous flow from the washers to the drying operation.

The fact that in a few years, American mills have invested over half a million dollars in Hunter Pneumatically Operated Squeeze Rolls, should encourage mills now using other methods of cloth extraction to investigate the savings possible for them. You are cordially invited to write to James Hunter Machine Company for more complete details.

JAMES HUNTER MACHINE CO. NORTH ADAMS MASS.

JAMES **HUNTER** MACHINE CO.

NORTH ADAMS, MASSACHUSETTS, U. S. A.

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about equipment they buy

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"SAFETY-PULL"
Ratchet Lever Hoists

For all kinds of construction and maintenance work, wherever a lift or pull is needed, there is a "Safety - Pull" to meet your requirements. SAFE, DURABLE, DEPENDABLE. Capacities range from ¾ to 15 tons, yet they weigh only 14 to 150 pounds.

"QUIK-LIFT"
Electric Hoists

For dependable and economical service the "Quik - Lift" incorporates EFFICIENCY with SPEED, POWER and DURABILITY. Just plug it in and speed up production. Capacities from 500 to 4000 pounds with lifting speeds from 4 to 49 feet per minute.

MODEL Y-C
Spur Geared Chain Hoists

Coffing Spur Geared Chain Hoists embody the planetary gear system with the Weston automatic brake. There are seven capacities ranging from ½ to 5 tons. A sturdy, dependable hoist for heavy work and in the production line.

Contact Your Supplier or Write for BULLETIN J C-100

Coffing Hoist Co.
Danville, Illinois U. S. A.

(Continued from page 242)

tured "chlorzymed" wool, which, as its name implies, had been dry chlorinated and then treated with enzyme "papein." In spite of having been washed in soap and water the cushions and quilts were resilient, light, and free from extruding fibers.

Research workers claim that wool can enter and compete in new fields. At the "Britain Can Make It" exhibition, shirtings of plain and fancy bedford-cord styles with colored stripings were displayed, made from lustrous, chlorzymed wool. Dress cloths, woven from dry-chlorinated fine botany, had been finished with papain and then printed, giving luxurious fabrics of soft and silky handle. Washable, printed nets, suitable for curtainings and scarf cloths, were also exhibited in which novel yarn and non-slip structures were utilized.

2-OZ. WORSTEDS. Some all-wool fabrics as light as 2 oz. per yd. were exhibited; these had been made from special fine yarns produced with the help of new fibers. Fine wools can be spun to 100s, but such yarns are too frail for the loom. They can be woven, however, if they are first twisted with a stronger yarn of cotton or acetate; the cotton is removed later by carbonizing or the acetate dissolved away by acetone. Both of these methods have disadvantages: Carbonizing tends to spoil the handle of the wool, while acetone is relatively expensive.

Recently, much work has been done on the conversion into textile fibers of alginic acid obtained from seaweed. Continuous filaments of calcium alginate are strong but dissolve in soap; this is an ideal combination of properties for a supporting thread, since it would be removed during the normal scouring process. The transient alginate yarn can be plied either in the same or in the opposite direction as the twist in the wool yarn. When plied in the same direction, twist is added to the wool yarn, giving the finished fabric a crisp handle. When plied in the opposite direction, the wool yarn can be left with little or no twist. The first method gives crepes or georgettes; the second, soft and full fabrics.

PERMANENT YARN CORES. The use of calcium-alginate filament yarn has some disadvantages. The yarn costs money and does not appear in the final fabric; doubling the filament with the final wool is expensive; the finished fabrics are not strong, particularly when the wool is loosely twisted. In instances where these disadvantages outweigh the advantages gained, a strong, fine, permanent, filament yarn is introduced into the fine wool yarn as a core thread. The new high-tenacity rayons, used for tire cords, have been found to be suitable; a 30-den. yarn is quite strong enough to act as a core in the spinning of a 70s worsted-count botany yarn. The attractive fabrics made using such dual yarns combine the advantages of both fibers and are light, warm, and strong.

Gage Prevents Run-Outs In RAYON WARPING

HIGHLIGHTS: *Individual bobbins of thrown yarn can be weighed quickly to ascertain if they contain sufficient yardage—Fewer knots in cloth and savings in warping time are advantages—Gage is used for combination yarns, crepes, and voiles.*

By J. A. KING

MILLS engaged in the manufacture of rayon, silk, and combination-yarn cloths often need to determine accurately whether or not there is sufficient yardage on the bobbin to prevent a run-out when it is to be used as warp yarn, and to accomplish this with the least amount of man-hours and with more accuracy.

When bobbins run out during warping, not only is time lost but also objectionable knots are introduced. Such knots in themselves are unsightly, particularly in cloths made from combination yarns; and they often cause breakouts or strip-backs during weaving.

Since all run-outs normally occur near the end of the warping cycle, knots from all beams (or several bands, if the silk system of warping is used) bunch together in the first cut

(Continued on page 250)

Advice

about your speed-control problem is yours for the asking!

When you Look to Lewellen you employ the pioneer in speed-control

Wire, phone or write
LEWELLEN MFG. CO.
Columbus, Indiana

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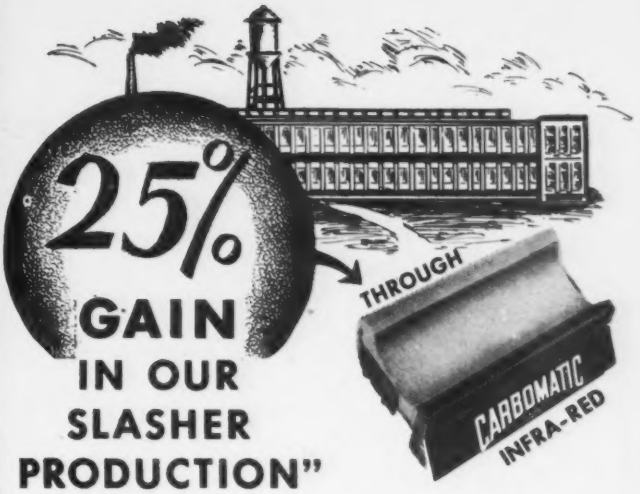
Variable-Speed

TRANSMISSIONS - MOTOR PULLEYS



● "The auxiliary drying equipment on our slasher shows us about 25% gain in production," writes this textile mill man (name on request) that nearly three years ago installed CARBOMATIC INFRA-RED burners.

"As a result of the use of these burners, the yarn is partly dried before it reaches the cylinders and there is a marked reduction in the flattening of the yarn, as well as a better splitting action as the yarn goes through the splitting rods. Consequently, we get a better warp."

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RADIANT HEAT

GENERATORS

(GAS-FIRED)

installed on Tenters, Palmers, Singers, Slashers, Curing Ovens—for ANY drying or heating need — invariably bring your costs down, greatly speed up production, and help turn out products of a higher, more uniform quality. Operation is safe, simple, efficient. CARBOMATIC pioneered modern infra-red heating in the Textile field—and 65% of our orders now are repeats! Our recommendations always cover your individual requirements.

Write for Bulletin TW-2

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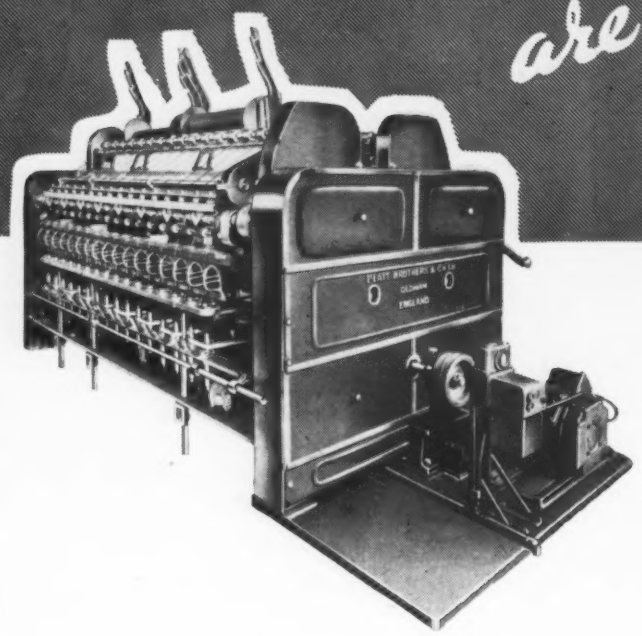
IF IT'S INFRA-RED — BE SURE IT'S

IN CANADA
Canadian Textile Engrg. Ltd.
980 St. Antoine St., Montreal

PLATT'S *are Unique!*



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RING SPINNING FRAME
FOR WOOLEN YARNS

The advantages accruing exemplify the new pattern Ring Frame.

★ 1 Continuous spinning for all grades of wool, kindred fibres and their mixtures for full warp or weft yarns.

★ 2 High production from minimum floor space.

★ 3 Low labor costs.

★ 4 Large packages and fewer doffings.

★ 5 Mechanical simplicity.

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● Just as surely as two and two add up to four, the territory served by the Norfolk and Western Railway adds up to better locations for industrial plants.

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● Abundant raw materials . . . plenty of pure water, and ample power facilities; superior quality, all-purpose bituminous coal virtually in your back yard; intelligent native labor, and communities to keep industrious people contented.

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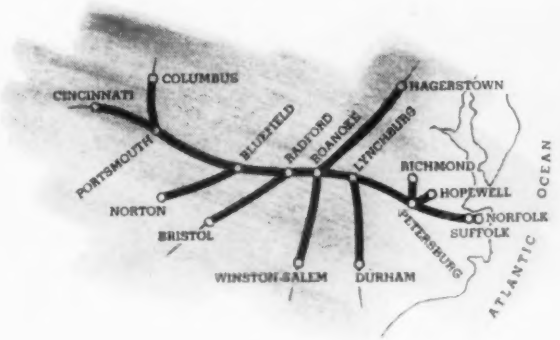

Norfolk and Western RAILWAY

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Silicone News

DC SILICONES

DC Silicone Insulation Insures Motor Life!

Photo courtesy Automatic Transportation Company.

It's human nature to want to beat the drums a bit when something you've put your sweat and capital into for years begins to pan out. We've been developing Silicone Insulation for years and giving silicone insulated motors the toughest testing electrical engineers could devise. We know it's the best electrical insulation there is. That confidence is now being justified.

Automatic Transportation Company of Chicago has announced that all of their new industrial trucks will be powered by DC Silicone insulated motors and lubricated with DC Silicone grease. That means a lot to us—and to you too. Engineers estimate that 20 to 50% of manufacturing costs goes into material handling. It costs you about $300, for example, to have a truck out of service while an armature is rewound.

Automatic Transportation is taking out insurance against such losses for you, by using Silicone Insulation. That kind of insurance is really necessary because there is no control over the kind of service industrial trucks get. They may have to lift 1,500 or 35,000 pounds. They may be used constantly or only part time. They may run over smooth floors or rough ones. A 2% grade doubles the torque on the motors.

That's why Automatic uses the best insulation there is. They put the best grease they can buy in the bearings. That's the DC 44 silicone grease, because it won't bleed into the windings or brushes. They also cushion the solenoid coils with Silastic*. Taken altogether, it's a nice example of how a conscientious, enterprising company can improve its product by using Dow Corning Silicones. These heat-stable, water-proof materials are described in Catalog No. X 1-4.

*TRADE MARK, DOW CORNING CORPORATION

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New York: Empire State Bldg.
In Canada: Fiberglas Canada Ltd., Toronto
In England: Albright and Wilson, Ltd., London

Dow Corning
FIRST IN SILICONES

(Continued from page 246)

of cloth that is woven. Warp run-outs are often responsible for the high percentage of first cuts that are classified as seconds—of course, troubles in starting up a new warp also contribute.

In addition to the foregoing, one does not want a large amount of yarn left on warp bobbins. Sometimes, the warp tailings can be used for filling, either knotted or knotless, but at other times it cannot. If only a very small amount of yarn remains on the bobbins, it can be wasted or used in a few ends running near (but not in) the selvage, where the knots that the yarn is bound to contain are least objectionable.

USUAL METHOD. Some mills pay little or no attention to the uniformity of size of warp bobbins, but most do pay attention and more will as demand returns for rayon fabrics as knot-free as possible. In the past, some preparatory departments weighed each board of voile, crepe, or combination yarn to be warped. If the weight was short, undersized bobbins were sought out and replaced until the board came up to weight.

Another practice has been to gage the diameter of bobbins to determine whether or not they might run out during warping. But variation in density of bobbins makes this system relatively unacceptable.

Actually, about the only way to be sure bobbins will not run out in warping is to determine accurately the net weight of each one. To weigh each bobbin individually would, normally, of course, take a great deal of time. But with the "multiple bobbin gage" the author has invented (patent pending) which is now being used in several Southern mills, each bobbin can be weighed individually in groups of 12, as shown in the accompanying illustration.

OPERATION. The operation of this multiple bobbin gage is very simple and rapid, as the operator merely places the loaded board on what is termed the "board table" and presses a button which immediately puts all of the bobbins in a weighing position, which means that they are raised to the top of the pin on the board to eliminate most of the friction caused by the pins rubbing against the inside of the bobbins. Immediately, the operator can distinguish which bobbins will run the desired yardage in the warper creel and which ones will not, due to insufficient yardage.

For each bobbin on the board, there are two lights on a control panel, one green and one red. If the bobbin is short, indicating there is an insufficient yardage on it, only the red light burns. If the bobbin has more than a sufficient amount of yarn on it, only the green light will burn.

If a bobbin of thrown yarn has insufficient yardage for the length of warp to be run, a red light burns on the panel in front of the operator. If yardage (as determined by weight) is sufficient, a green light goes on.

When only the red light burns, it indicates that the bobbin should be sent to the redrawing department or direct to the filling-winding department for use as filling yarn.

To guide the operator, each set of lights on the control panel is numbered and a corresponding number is given the related bobbin on the board so that the operator can easily distinguish the individual bobbins. As soon as the underweight bobbins are removed from the board and replaced with correct ones, the operator then presses another button and immediately the board table is raised thus replacing each bobbin on its original pin. The self-stacking board is then ready for removal.

According to an estimate in one Southern rayon mill, this gage saves from 30 to 50% of the redrawing as compared with its old method of gaging with a fork. It is so rapid that a good operator can gage in excess of 1,200 bobbins per hour, which is approximately one-third of the time formerly consumed in the gaging of bobbins, one at a time, by the weight or by the fork method.

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Damp-Tex super-enamel can be applied to surfaces despite moisture, heat, fumes and many other extreme conditons. Its water-proof film retards deterioration, increases efficiency, turns depressing, dingy interiors into gleaming, porcelain-smooth beauty. Resistant to fungus, 2% caustic solution, steam and lactic acid. One coat covers. Comes in white and colors. Used in over 4000 plants. Write for our trial offer.

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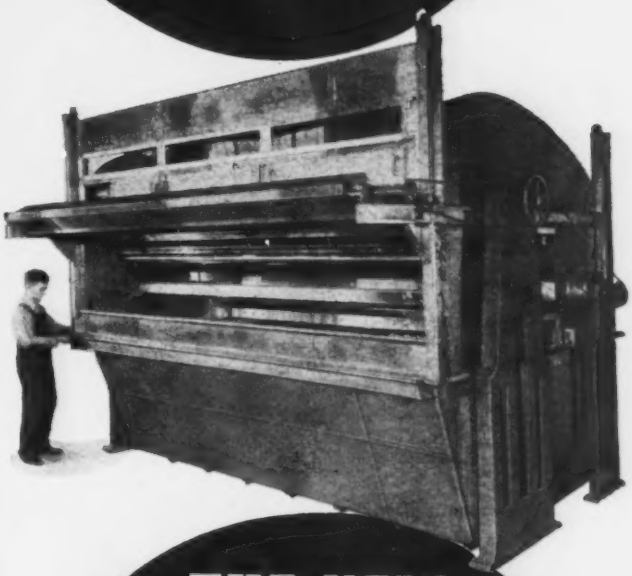
Everything you've ever wanted in a Dye Box



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Manufacturers of stainless steel textile equipment, dye boxes, linings, cylinders, dry cans, rolls, hoods, tanks

"QUIET JUNIOR! Daddy's doing his homework"

Junior's old gent is a busy man.

He has to have plenty of "know-how" to keep on top of his job.

Sometimes it takes home-work to keep abreast of things and right now he's reading this issue of this McGraw-Hill magazine—the one you are holding in your hand.

Obviously, he's not looking for glamour, amusement, or entertainment. *He is strictly on the make for ideas.*

He wants to know what the other fellow is doing—what's new in methods and processes that will help him do a better job.

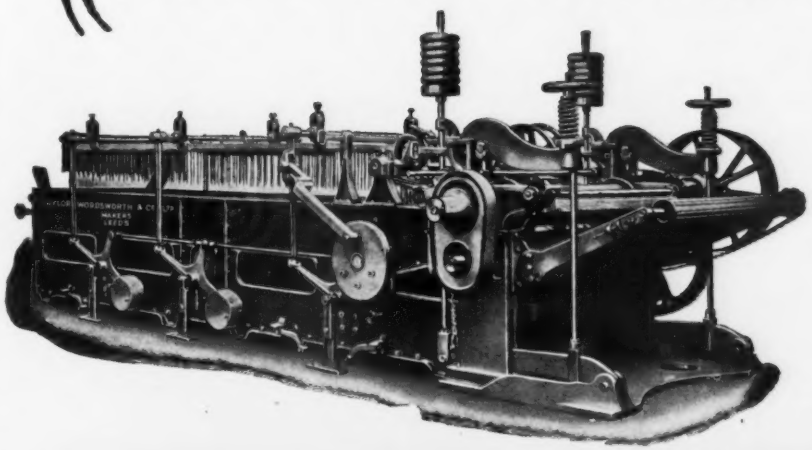
He's an avid reader of the ad-pages as well as the editorial content. The advertisements along industry's shopping street give him an opportunity to inspect the products and services of America's leading manufacturers—and he examines them with an eye to what they can do for him.

Yes—Junior's old gent is a busy man. But he never misses a trick!

To keep in touch with the parade • • • read the ads.

F-4

for Perfect WOOL WASHING



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This modern Harrow type machine handles the stock gently and with little agitation through every stage. All the controlling mechanism is below the top of the bowls and all the belts are on one side, permitting rapid inspection of the progress of the wool. Settling tanks extend the full length of the bowls, giving maximum area for dirt settling.

Aireflow DRYING MACHINE for

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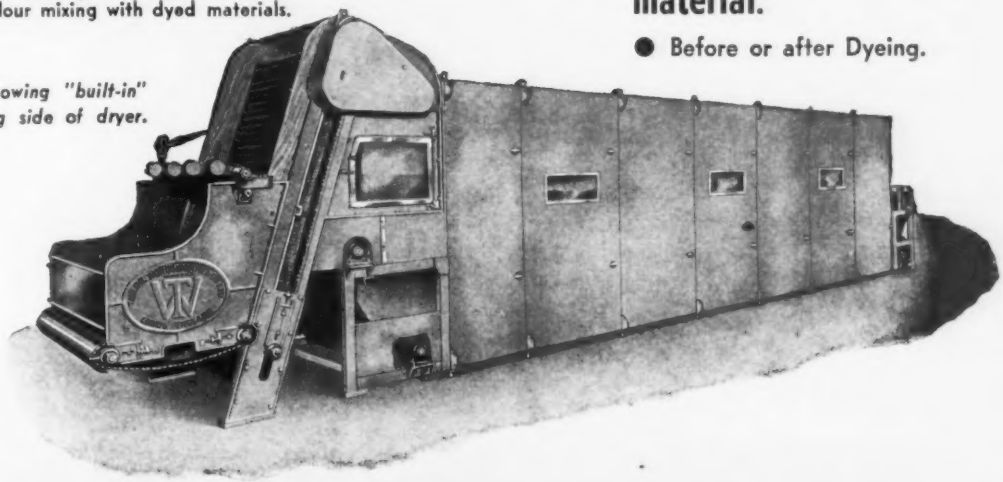
● Before or after Dyeing.

An entirely New Dryer of the single Apron Type with a positive and controlled air circulation. Compact in size, low in steam consumption and upkeep costs. Entirely accessible and clean in operation. No danger of colour mixing with dyed materials.

● *View at Feed end showing "built-in" auto feed and working side of dryer.*



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News of the month

Cotton Council Hears Good News. Secretary Clinton Anderson, Department of Agriculture, told the annual meeting of the National Cotton Council at Galveston, Tex., last month that the government had got rid of all its surplus cotton at a profit of $186,000,000. "At the time of the cotton conference late in 1944," he said, "government holdings and loan cotton totalled 7,500,000 bales. Today CCC is sold out of cotton." He indicated that private trading in cotton would be reestablished for Japan and Germany as soon as possible. He added that the government cotton program for Germany will be concluded by July and for Japan perhaps by October. However, Reade Dunn, foreign trade director, told the meeting that cotton trade with Europe will be plagued for a long time by insufficient labor, fuel, and dollar exchange. The Council voted to oppose all legislation now pending in Congress which would prohibit manufacture and sale of fabrics which failed to meet government imposed standards of flammability. The group also went on record as supporting labor legislation which would prohibit the closed shop and the check-off and provide court review of NLRB decisions and outlaw certain forms of strikes. Oscar Johnson, of Scott, Miss., was re-elected president for the 10th consecutive term.

Rayon Advanced Again. Rayon has been advanced by several makers at the close of January by 2 to 15¢ per pound. This follows the first postwar advance declared last November.

Finish 9% More Goods. At the annual meeting of the National Association of Finishers of Textile Fabrics last month, Miss Alice C. Moore, secretary, reported that total yardage finished in 1946 was 9% more than 1945. All officers were re-elected; the president is William Berry of Riegel Textile Corp.

Rayon Production. Textile Economics Bureau reports that 1946 production of rayon and staple in the United States at 853,900,000 lb. tops 1945 by 7½% and is a new high record. World production based on incomplete returns, is 1,800,000,000 lb., a gain of 18% over 1945 but still 37% under the high year of 1941.

ACTM Meets. Ward Delaney, head of the Institute of Textile Technology, outlined the organization and projects of his group before the annual meeting of the Association of Cotton Textile Merchants of New York in New York, Jan. 30. A. W. Hughes, president of J. C. Penney Co., urged the merchants to cooperate in accordance with the law of supply and demand not with that of "scarcity and demand." He instanced a 55 to 78% increase in price of rayon yard-goods over the war period and a 225% increase in cotton goods. "That won't hurt the sale of rayons," he observed.

Heads ASA. Frederick R. Lack, vice president of the Western Electric Co., New York, will be president of the American Standards Association following the recent annual meeting. He succeeds Henry B. Bryans, executive vice president of the Philadelphia Electric Co. George H. Taber, Jr., executive vice president of the Sinclair Refining Co. was elected ASA vice president.

Textiles Oppose Tariff Cut. A field-day for textile men was current in Washington late in January when

(Continued on page 258)

Textile Calendar

ASTM spring meeting, Philadelphia, Feb. 24 to 28, 1947.

New Bedford Textile Institute Alumni Association, dinner meeting, Narragansett Hotel, Providence, R. I., Mar. 1, 1947.

Alabama Cotton Manufacturers Association, annual convention, Buena Vista Hotel, Biloxi, Miss., April 13 to 15, 1947.

Knitting Arts Exhibition, Convention Hall, Atlantic City, N. J., Apr. 29 to May 2, 1947.

National Association of Hosiery Manufacturers, annual meeting, Hotel Claridge, Atlantic City, N. J., Apr. 28, 1947.

Hosiery Industry Conference, Hotel Claridge, Atlantic City, N. J., Apr. 28 and 29, 1947.

Phi Psi Textile Fraternity, national convention, Hotel Charlotte, Charlotte, N. C., May 2 to 4, 1947.

Second National Plastics Exposition, Coliseum, Chicago, May 5 to 11, 1947.

Cotton Manufacturers Association of Georgia, 47th annual meeting, Sheraton-Plaza Hotel, Daytona Beach, Fla., May 15 and 16, 1947.

A World Trade Week, sponsored by Chamber of Commerce of the U. S., May 18 to 24, 1947.

International Exposition of Textiles, Grand Central Palace, New York, June 2 to 7, 1947.

ASTM, annual meeting, Atlantic City, N. J., June 16 to 20, 1947.

You can tell a well-groomed woman by her legs

She wears **DuraBeau** *Finished hosiery for lasting beauty*

Reg. U. S. A. and Canada

. . . that is why women are always so conscious of their hosiery. To a woman, snags, water spots, runs, shiny hosiery are more deflating than last year's hat!

DuraBeau Finishes impart that smoky, dull, gossamer look, that makes hosiery so beautiful and legs so lovely. It is a Finish that goes right to the very heart of the fibre . . . a Finish that gives added wear,—and snag resistance, water and spot repellency. It is a true "film of protection." It is the Finish that a well-groomed woman always looks for . . . always wears.

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Air tight no oil seepage
No swelling whatever of first bosses
Extra case hardened neck Interchangeable
Entire strain on 3" ground taper like automobile axle tail stock reamers etc.
No strain on threads whatever quickly installed
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★ **Any type DRAFTING ROLL EXACTLY DUPLICATED to blueprint.**
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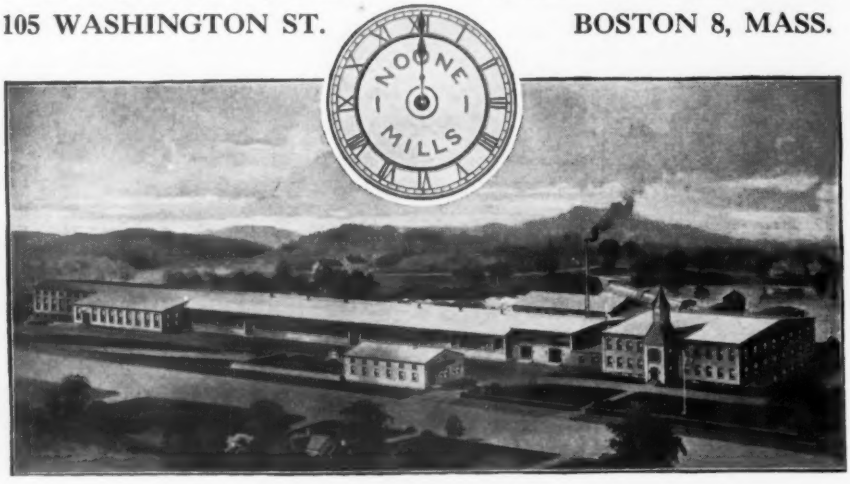

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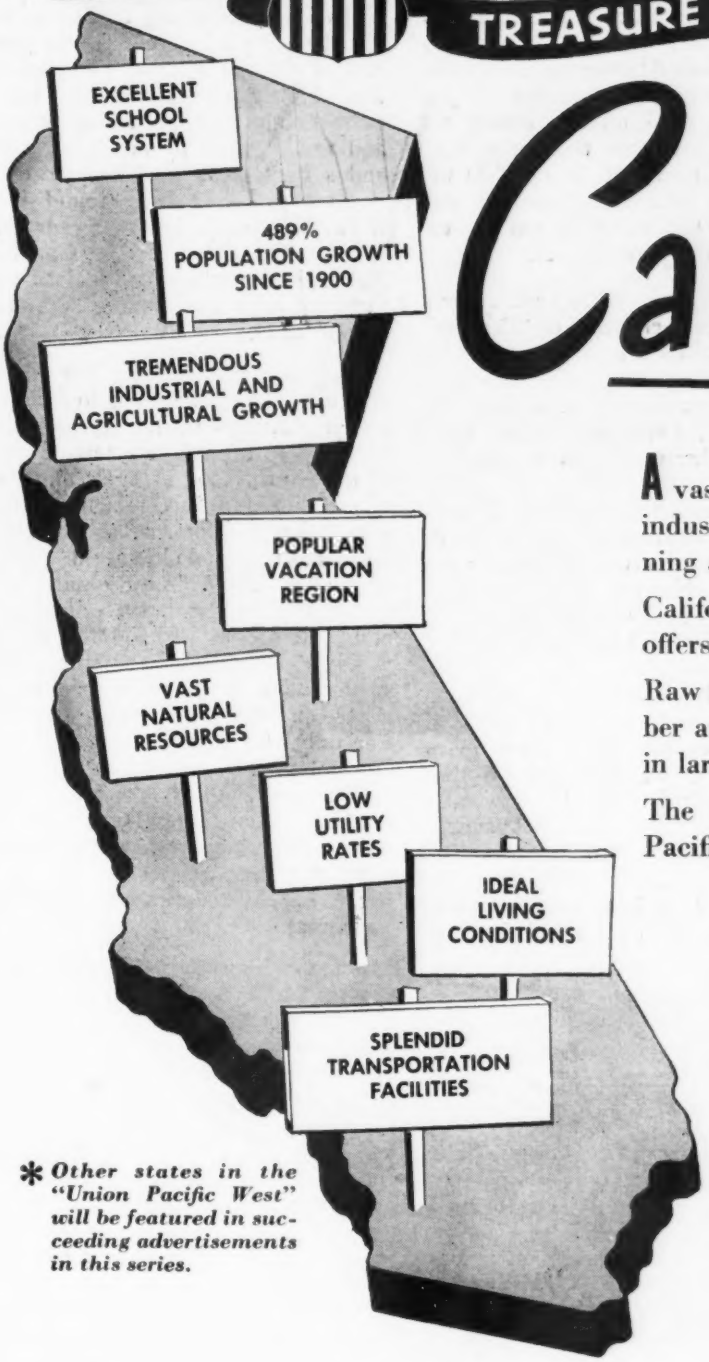
TREASURE MAP OF INDUSTRY



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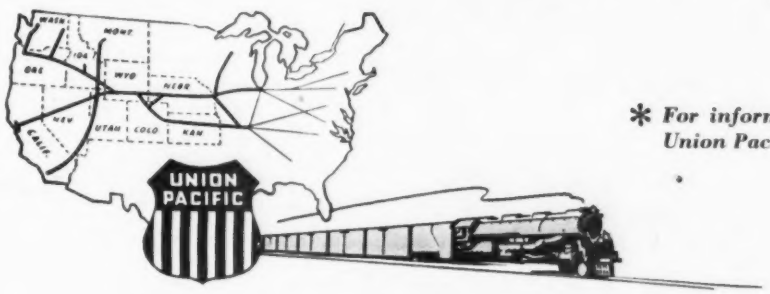
* *Other states in the "Union Pacific West" will be featured in succeeding advertisements in this series.*

* *For information address Industrial Department, Union Pacific Railroad, Omaha 2, Nebraska.*



UNION PACIFIC RAILROAD

THE STRATEGIC MIDDLE ROUTE

STRIPES
•
CHECKS
•
PLAIDS

Use acetate fast colors on spun or filament yarns. We package dye them in large batches. Delivery to you in the wound form.

★

Atlantic Rayon
CORPORATION

Dyers and Converters of Synthetic Yarns for All Industries

Plant at Providence 1, R. I.

BRANCH OFFICES:
Empire State Bldg., 5th Ave.
New York 1

3701 North Broad St.
Philadelphia 40

★

representatives of nearly all major associations together with individual manufacturers and labor representatives were heard before the Committee for Reciprocity Information on possibility of tariff revision during the general negotiations this spring with 18 foreign countries. Much data was presented. The consensus was that tariffs on textiles could not be cut without damage or disaster.

May Halt Flammability Law. A committee recommendation of "Do Pass" has been given a legislative bill postponing enforcement of California's new inflammable fabric regulations until April 1, 1948, and setting up a seven-member committee to give further study to the problem. No action can be taken on the bill until March, when the legislature reconvenes after its usual February recess. The new regulations, effective Jan. 6, 1947, (T.W. Jan. 1947, p 218) were the first in the nation to place a statewide prohibition on sale or manufacture of textiles considered dangerously inflammable. Representatives of California retailers and manufacturers pressed for the delay in enforcement. Retailers claimed that testing standards under the new rules would outlaw the sale of a "whole field of ordinary, everyday goods made of cotton and other familiar materials which have been worn for generations with no fear of exceptional fire hazard."

Marks 50 Years. The Pond Lily Co., New Haven, Conn., is celebrating its golden anniversary at the turn of its first 50 years in the dyeing and finishing of textile fabrics.

Regional Hosiery Conferences. The National Association of Hosiery Manufacturers is holding a series of regional conferences. The first is in cooperation with the Southern Hosiery manufacturers Association. This series started at Roanoke, Va., on Feb. 6, followed with conferences at Knoxville, Chattanooga, Atlanta, Charlotte, Hickory, and High Point, ending Feb. 14.

Columbia Courses. Evening textile courses held at Columbia University, New York, are beginning during the first week of February. Several are new courses, while others are continuations of those started in the fall. H. R. Mauersberger is in charge of these courses.

To Arrest U. S. Wool Decline. Representatives of all sections of Wyoming's agricultural, financial, and commercial interests met in Cheyenne last month to discuss a permanent plan to halt the continuing decline in national wool production. It was planned to organize a strong non-partisan block of Western states to fight vigorously for additional protection for wool and wool textiles by increased tariffs and a quota system. The idea of a quota system was gaining ground since it has been supported by Forstmann Woolen Co., S. Stroock & Co., the National Association of Wool Manufacturers, and the Textile Workers Union, CIO.

Testing Arctic Clothing. The Philadelphia QM Depot is going to find out how the Army's winter gear actually holds up in the sub-zero temperature of the North. Paul E. Walz, director of research and development at the Depot, has left for Alaska, where he will act as technical observer at "Operations Frigid." Walz will observe the durability of headgear, parkas, trousers, and jackets lined with quilted Fiberglas batting. He will wear rubberized impermeable socks made of cotton dipped in latex which covers the outside only. Of particular interest will be the "Brynge" vest, which is a Norwegian development, hand-made by knitting heavy cotton cord. Worn next to the skin beneath the underwear, it creates a layer of warm air which is held between the skin and underwear.

May Relax Massachusetts Labor Law. Certain working conditions in Massachusetts factories and mechanical establishments face the probability of revision at the present legislative session as the result of a bill, filed by the state Commissioner of Labor & Industries, James T. Moriarty, after conferences with industrial plant managers and union leaders. The new attitude marks a distinct advance toward approaching such problems on a cooperative basis. Hearings are to be given on the bill. Relaxation of some of the former legal restrictions as to working hours and lunch period allowances are outstanding features of the bill. It abolishes the former legally required 6 p.m. closing hour for the textile industry, which has been suspended at the discretion of the commissioner during the last few years. It provides that the closing hour for women in all manufacturing plants, long fixed by law at 10 p.m., is to be extended to 11 p.m. It also provides that the commissioner may grant operation of a third shift if bottlenecks occur.

New SAE Felt Standards. The felt standard of the Society of Automotive Engineers is being amended commen-

SAVE WITH THE NEW *Andal* RUBBER THREAD

*TRADE MARK REG.

Production costs go down, quality goes up with Andal* — the new and better rubber thread because —

- Andal* comes in LONGER LENGTHS.
- Andal* has HIGHER ELONGATION.
- Andal* has MORE EVEN TENSION.

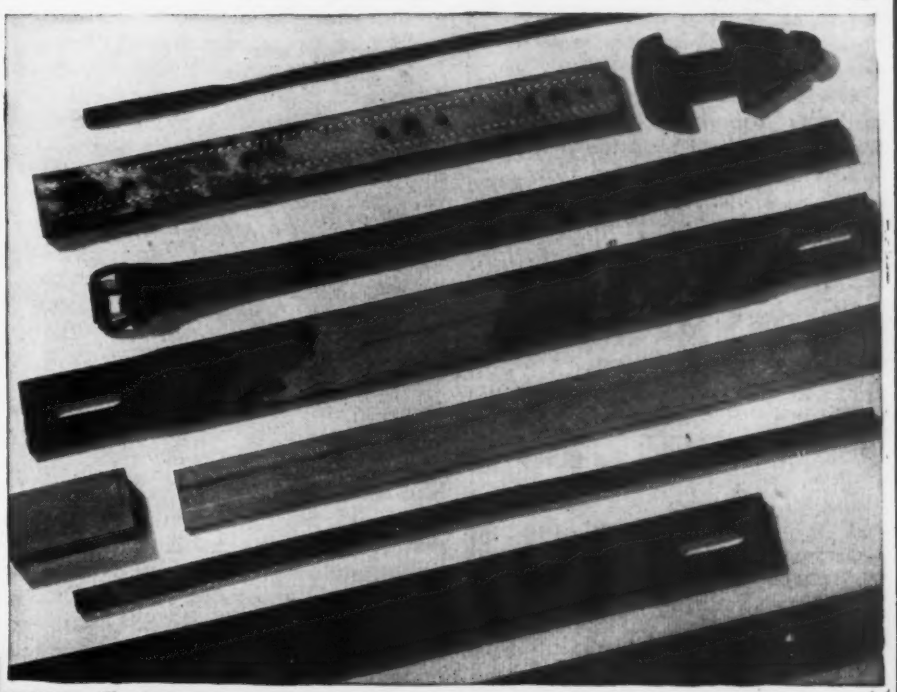
Use Andal* and get less ends down on your looms.

ANDREWS-ALDERFER PROCESSING CO.
120 ASH STREET AKRON 8, OHIO

Hairy and Oak Leather Loom Strapping

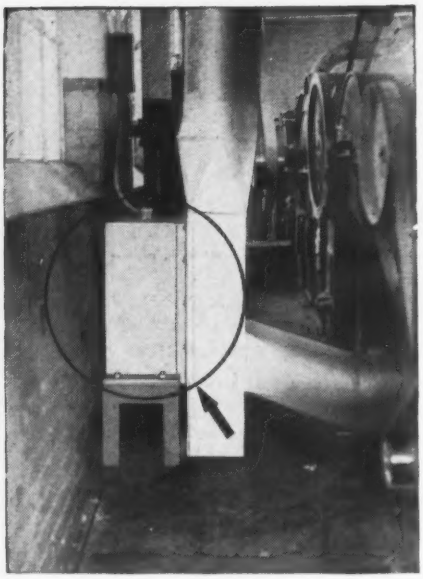
JACOBS
"Verybest"

Only the finest hides, custom cut and hand calipered to individual order, go into "Verybest" Strapping.



Order Jacobs *"Verybest"* by name— to be sure.

E. H. JACOBS MFG. CO.
DANIELSON, CONN. ESTABLISHED 1869 CHARLOTTE, N. C.

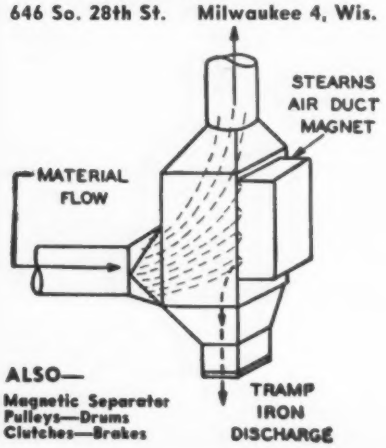


for REMOVING TRAMP IRON from AIR BLOWN MATERIAL

You want a magnet with POWER, constant, efficient, dependable power, ELECTRICALLY, ENERGIZED magnetic power that will definitely remove tramp iron and metallic refuse from such material as cotton, wool, shoddy, etc. You want automatic cleaning of the magnet that will remove the tramp iron by a simple push button touch, without the messy, laborious, time consuming manual cleaning operation.

You want a magnet designed and built by experienced magnetic engineers. If you have the problem of tramp iron in wind blown material consult your Stearns Magnetic sales representative or write Stearns Magnetic Milwaukee 4.

STEARNS MAGNETIC
MANUFACTURING CO.
646 So. 28th St. Milwaukee 4, Wis.



ALSO—
Magnetic Separator Pulleys—Drums Clutches—Brakes

mensurate with postwar commercial practice, as recently coded by the manufacturers of this material, through the Felt Association. The SAE felt standard was last revised in 1940. In the interval since that time many new uses have developed for felt. The older uses are simplified, and four thicknesses of ball-bearing felt replace eight while two thicknesses of lining felt replace eight.

New Silk Plan. The U. S. Commercial Co. on Jan. 24, announced a new policy on Japanese raw silk distribution. It will offer the silk ex-warehouse in the New York area at a schedule of fixed prices for the various grades. These prices are guaranteed to be minimum until Aug. 1, 1947. Around June 15, USCC will announce guaranteed minimum prices for a future period. The minimum prices represent a sharp drop, being $1.75 to $2.20 below the upset prices at the December auction. The January auction was postponed till Feb. 7 and was conducted with the new prices as upset prices. These new figures range from a low of $3.95 for grade G to $5.60 for grade SP-AAA. USCC plans a cooperative promotional plan to sell the American consumer on silk.

Selling Jap Cottons. RFC states that its subsidiary, the U. S. Commercial Co., had completed arrangements to sell a substantial quantity of Japanese cotton piece goods to the Netherlands Purchasing Commission, acting on behalf of the government of the Netherlands, for distribution in the Netherlands East Indies. Company officials stated that this initial transaction represents the sale of about 40,000,000 yd. of material for approximately $10,000,000. These goods are available for prompt shipment from Japan. Other substantial sales to Far Eastern countries are in immediate prospect. The goods have been priced on the basis of September OPA ceiling plus 25% allowed by the OPA to the merchant exporter. German goods are also now available.

New U. S. Flax. Fiber flax improvement work has resulted in a new variety that is disease resistant and has an outstanding yield. Known as Cascade, it is the result of a cross by Dr. B. B. Robinson, of the U. S. Department of Agriculture. It has surpassed all other varieties both in tonnage and percentage of fiber. Tests in the Groveland district of Oregon brought a yield thought to be a national record; it was slightly over four tons an acre on a 20-acre field.

N. E. Fund at Half-Way Mark. On Jan. 17, the New England Textile Foundation passed the half-way mark in its campaign to raise $250,000 per year for the next four years for the textile schools of New England. Gifts received at that time totalled $125,970, according to Laurence F. Whittemore, campaign chairman. The capital fund, as well as the interest on same, will be available to the textile schools. The money will be used to supplement teacher salaries which are now inadequate and limited by statute in most cases, to modernize school equipment, and for a limited number of scholarships.

Maid-of-Cotton Tour Starts. Chosen 1947 Mand-of-Cotton at the recent contest at Memphis, Miss Hilma Seay, of Memphis, Tenn., has received a month of training and fashion fitting in New York preliminary to her international cotton-fashion and goodwill tour which opens in Miami, Feb. 17. This tour is sponsored by the National Cotton Council; the Memphis Cotton Carnival Association; and the Cotton Exchanges of Memphis, New Orleans, and New York.

India to Build Looms. At Bangalore, Mysore State, India, has been established the Mysore Machinery Manufacturers, Ltd., with an authorized capitalization of more than $750,000. It plans to be in production this spring. Power looms, dobbies, etc. will be important items in its output as there is believed to be a tremendous market for textile plant equipment in India. Of the approximately 200,000 power looms in India, more than 75% are outmoded and more than 50% are dangerously worn out. The new firm will also make agricultural equipment and machinery, malleable cast iron fittings for railway and industrial uses, and engage in the fabrication and erection of structural steel work.

Swedish Rayon Plant to Use Continuous Process. A viscose-rayon plant, the product of which is to be used both for tire cord and apparel fabrics, is to be built in Alvenas in Varmland, by AB. Cellull, according to press reports from Stockholm. Industrial Rayon Corp. patent, acquired by AB. Cellull for Norway, Sweden, Denmark, and Finland, is to be used. This is presumably the continuous process system. Building and patent costs are estimated at over $6,000,000. The machinery is being bought in England and America.

OPPORTUNITY

For Textile Engineer

Our client is a large manufacturer of pile upholstery fabrics who is prepared to pay a generous salary to an experienced man possessing the following qualifications:

1. Technical knowledge of double-shuttle plush looms, including ability to guide plant engineer in standardizing loom setup for economical quality production.

2. Sufficient knowledge of all phases of pile fabric production from yarn preparation through finishing so as to guide technicians controlling specifications in each department.

3. Ability to arrange plant layout so as to provide maximum of straight line production.

4. Familiar with newest developments in synthetic yarns and blends of synthetic and natural fibres in their adaptation to upholstery fabrics.

5. Knowledge of latest mechanical equipment available for all phases of pile fabric production.

Give complete details in first letter, including age, experience, education, desired salary, references, and when available. Enclose recent photo or snapshot.

You may reply in confidence; our client's organization is aware of this advertisement.

John Falkner Arndt & Company, Inc.

FIDELITY-PHILADELPHIA TRUST BLDG. PHILADELPHIA 9, PENNA.

THE OLDEST AND LARGEST

Manufacturers of

RING SPINNING AND TWISTER TRAVELERS

IN THE UNITED STATES

NATIONAL - ETARTNEP FINISH
A NEW CHEMICAL PROCESS

American • Hicks • Wilson

United States Standard
Wentworth Double Duty
and Gravity Travelers

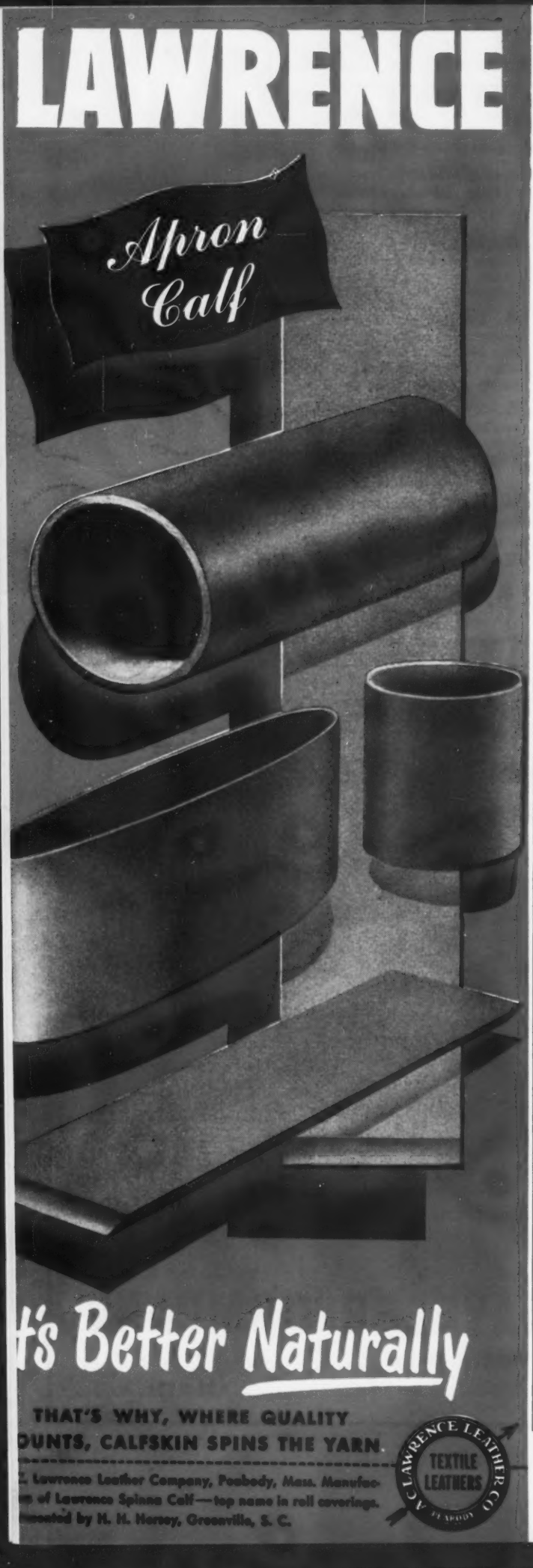
MAKES STRONGER YARN

Double Duty and Gravity Travelers embody a new heat-treating principle, which reduces to the irreducible minimum the frictional contact between the Traveler and the Ring. The life and endurance of the Traveler is not only multiplied by two, and oftentimes to a greater degree, but the life of the spinning Ring is increased in relative proportion to the lessened frictional load.

NATIONAL RING TRAVELER COMPANY

PHILIP C. WENTWORTH, Treas.

PAWTUCKET, R. I., 354 PINE STREET **CHARLOTTE, N. C.**


LAWRENCE
Apron Calf
It's Better Naturally
THAT'S WHY, WHERE QUALITY
OUNTS, CALFSKIN SPINS THE YARN.
C. Lawrence Leather Company, Peabody, Mass. Manufac-
rs of Lawrence Spinna Calf—top name in roll coverings.
unted by H. H. Horsey, Greenville, S. C.
C. LAWRENCE LEATHER CO.
TEXTILE LEATHERS
PEABODY

NEWS ABOUT Suppliers

James Hunter Machine Co., North Adams, Mass., has elected James T. Hunter as president. He is the fourth of his line to hold that office. He succeeds his father, the late James D. Hunter. The new head has been associated with the company for 30 years, for the last 20 of which as vice president. His son, James H. Hunter, has been re-elected a vice president, and his second son, Richard A. Hunter, has also been elevated to a vice-presidency. Carl W. Kamp, assistant treasurer for the last 16 years, has been elected treasurer, a position which the late James D. Hunter had also held.

C. H. Tennant Co., Minneapolis, Minn., at its recent five-day convention gave a major position on the program to discussion of maintenance of textile mill floors. Tennant representatives from the South and from the New England states participated in the symposium on millfloor maintenance, along with Tennant engineers who have conducted exhaustive tests on floor dry-cleaning in textile mills. Appointment of Robert F. Guthrie to manage Tennant's Charlotte, N. C. office, headquarters for the Southern textile region, was announced; working with him are A. S. Mabusth of Greensboro, N. C., A. S. Lavett of Greenville, S. C., and John Thorsen of Atlanta, Ga.

Lebanon Steel Foundry Co., Lebanon, Pa., has appointed John H. Boyd, formerly of Richmond, Va., to be district manager in charge of the branch office in Atlanta, Ga., at 17 Edgewood Avenue, N.W., which serves the textile, chemical, and food processing industries of the Southeast.

Frank W. Kingsley, who for more than 40 years has represented the Hampton Co. in the Middle West, is retiring and will no longer maintain his office in Chicago. He is a charter member of the Chicago Yarn Men's Club, and during the last 25 years has served in the various offices of the club, including that of President in 1932. He has been made an honorary member.

JOSEPH LEMAY, who has been appointed by the Farrel-Birmingham Co., Inc., Ansonia, Conn., to be general manager of the company's Atwood Division, manufacturers of textile machinery, at Stonington, Conn. He succeeds William M. Fraser, who recently resigned after holding this post since early in 1945 when the Atwood Machine Co. was purchased by Farrel-Birmingham. Mr. LeMay has been with Farrel-Birmingham since 1921.

Kaumagraph Co., Wilmington, Del., is now represented in the Chicago territory by William B. Gardner. A. D. Crawford, former Chicago representative, resigned to become associated with Burson Knitting Mills, Rockford, Ill. Mr. Gardner has been associated with Sears, Roebuck & Co. for the last 10 years.

Morris Speizman Co., Inc., Charlotte, N. C., has added Clyde E. A. Keene to its sales staff. Mr. Keene will cover Georgia, Tennessee, Alabama, and surrounding territories for the company.

Pavia Shuttle Co., Allentown, Pa.—Hector Pavia has become sole owner of this company since the death of his brother L. Pavia last year.

Arnold, Hoffman & Co., Providence, R. I., has appointed Arthur H. Noble, Jr., as plant manager for its new Southern plant at Charlotte, N. C. He has been with the company since 1938.

American Viscose Corp. New York, has appointed Arthur N. Tingley to be head of the Textile Chemicals Div. of the Textile Research Dept. at Marcus Hook, Pa. The functions of the division will be to develop new lubricants and sizes for rayon and other fibers, new methods of applications of these materials, and to service present products such as Avconit, Avcosew and Avcodisk, which have been developed by American Viscose Corp.'s textile research and chemical research departments and are manufactured by the Atlas Powder Co.

E. I. du Pont de Nemours & Co., Wilmington, Del., has appointed Frank H. Ernst as director of production of the Rayon Div. He succeeds George E. McClellan, with whom he served for the last two years as assistant director. Mr. McClellan was recently appointed assistant manager of the Rayon Div. Dr. Linton G. Ray, Jr., a research chemist at the Yerkes Rayon Plant, Buffalo, has been appointed a research-group leader in the pioneering research section there. Charles E. Mears, who started as a student rayon operator in 1929, has been appointed manager of the new nylon yarn plant under construction near Chattanooga, Tenn. Truman C. Welling, nylon district sales manager at Charlotte, N. C., has been appointed to the new position of Nylon Div. sales manager at Wilmington in charge of district sales offices. P. D. Atwood, district sales manager at New York, has been appointed promotion manager of the Nylon Div. in Wilmington. A. J. Smith, Jr., promotion manager, succeeds Mr. Atwood at New York. David B. Hardin, of DuPont's Rayon Div. in New York, succeeds Mr. Welling at Charlotte.

WALLACE C. McELROY, who has been appointed by Burkart-Schier Chemical Co., Chattanooga, Tenn., as technical and sales representative in the New England area, with headquarters at Lowell, Mass. Mr. McElroy has had many years experience in the application of textile wet processing agents.

Mathieson Alkali Works, New York, has been awarded the government ammonia plant at Lake Charles, La. The agreement embodies a long-term lease with an option to purchase.

Polymer Industries, Inc., Astoria, N. Y.—John W. Ogletree is now associated with Dr. M. Konigsberg, Dr. H. L. Kane, and Dr. Frank Campins as directors and officers of this firm which acts as manufacturer and consultant on sizings, gums, softeners, impregnants, and laminants for the textile and paper industries. The four principals were formerly with National Starch Products, New York.

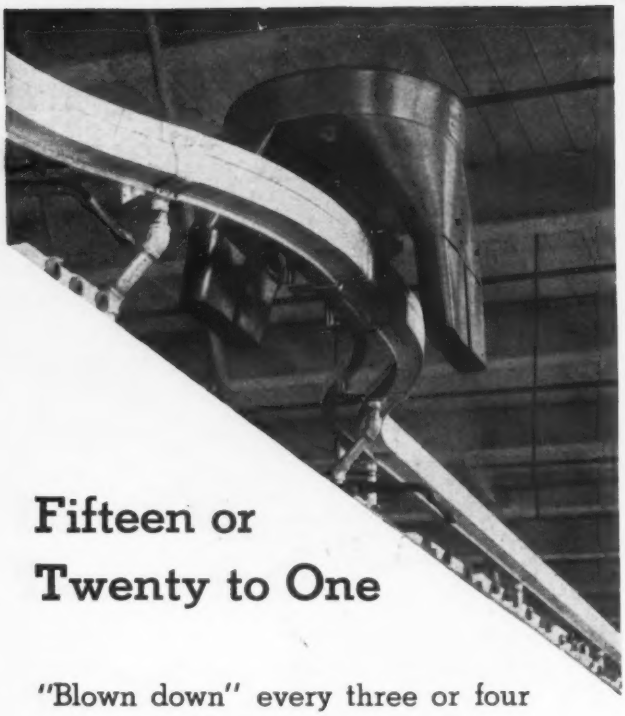
Apex Chemical Co. Inc., New York has appointed Robert Zeuren to its sales staff in the New England territory. Mr. Zeuren, until recently superintendent of dyeing and finishing for International Processing Co., Elizabeth, N. J., has a background of 25 years in the finishing field.

Stein, Hall & Co., Inc., New York, has appointed Roger Shoals to take over the management of the liquid glue section of the Adhesive Dept.

Reliance Electric & Engineering Co., Cleveland, Ohio, has appointed A. R. Hough as a southern sales representative with headquarters in Knoxville, Tenn. He succeeds Arthur L. Pollard, who has announced his retirement as a manufacturer's representative. Mr. Hough will also represent Weston Electrical Instrument Corp., Meriam Instrument Co., Cornell Dubilier Electric Corp., and Superior Electric Co.

Pennsylvania Salt Mfg. Co., Philadelphia, Pa., has added Bryce Gray, former first lieutenant in the United States Army Air Force, to the staff

TOP NAME IN ROLL COVERINGS
LAWRENCE
Spinna Calf
It's Better Naturally
THAT'S WHY, WHERE QUALITY COUNTS, CALFSKIN SPINS THE YARN
A. C. Lawrence Leather Company, Peabody, Mass. Manufacturers of Lawrence Calfskins — 1st choice for aprons.
A. C. LAWRENCE LEATHER CO.
TEXTILE LEATHERS
PEABODY



Fifteen or Twenty to One

"Blown down" every three or four minutes, frames are cleaned by Parks-Turbo Traveling Cleaners.

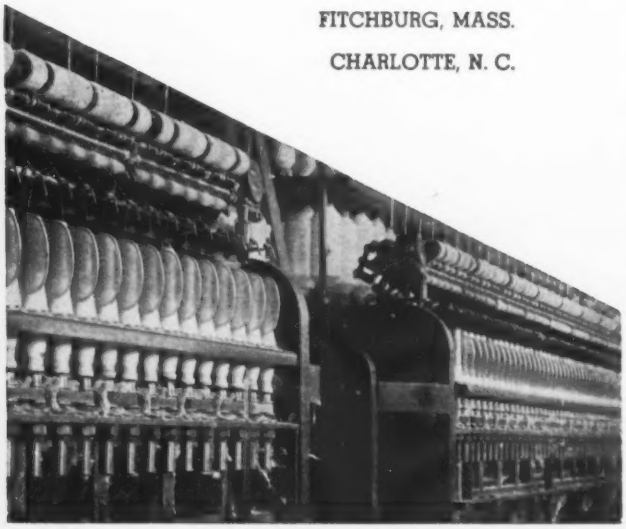
15 or 20 times oftener than is customary by hand. Hand cleaning uses about half the spinner's time.

With ParksTurbo Traveling Cleaners, so much of this hand cleaning is done away with, spinners do what they like to do—more spinning. And they do it with less fatigue.

Parks-Cramer Company

FITCHBURG, MASS.

CHARLOTTE, N. C.



of its advertising department. John H. Schneider has joined the sales service staff of the Special Chemicals Div.

Monsanto Chemical Co., St. Louis, Mo., has appointed Richard C. Urban to the new position of sales promotion representative in the New York area for the Textile Chemical Dept., Merrimac Div. His duties include promotional work with textile converters. He will be responsible for launching an identification and quality control program for Monsanto's textile chemicals. He was formerly with the North American Rayon Corp. as assistant advertising manager and was later associated with Rohm & Haas Co.

Robert B. Semple, of St. Louis, has been appointed director of Monsanto's general development department. He is succeeded as petroleum chemicals sales manager by John Wade Newcombe of the petroleum sales department. Carl F. Grasser has been made sales manager of thermo-setting molding materials for Monsanto's Plastics Div., Springfield, Mass. He will be in charge of sales of Resinox and Resimene molding compounds.

Eastern Stainless Steel Corp., Baltimore, Md., demonstrated to a group of editors of industrial publications, Jan. 29, many recent improvements which have been made in its stainless-steel sheet plant, which now has a productive capacity of from 2,000 to 2,500 tons monthly. A unique new pickling unit and an extensive battery of recently installed polishing equipment account largely for the high capacity. Polished sheets can now be coated with a plastic to protect their surfaces during further processing, shipping, and even fabricating. This "liquid envelope," as the coating is called, acts also as a lubricant to facilitate forming of the steel with less power and with less wear and tear on dies. The latter development, the Eastern executives believe, will tend to increase uses for stainless steel.

Calco Chemical Div., has appointed Dr. Glenn S. Watson as chief chemist of the Marietta, Ohio, Works. Fraser M. Moffatt, Jr., has been made manager of the Export Department of the Calco Chemical Division.

W. H. GAMBLE, who has been appointed general sales manager of Corn Products Refining Co., New York, with responsibility for sales of all of the company products. He is vice president and a director of Corn Products Sales Co., and has been with the company since 1910.

Emkay Chemical Co., Elizabeth, N. J., has appointed H. Martin Friedman as research director in charge of the development and application of new synthetic chemicals for their Textile Div. Mr. Friedman was formerly chief chemist of the Leather Chemicals Division, Hart Products Corp., and plant manager of DePaul Chemical Co.

Diamond Alkali Co., Pittsburgh, Pa., has arranged an $8,000,000 ten-year bank loan to help complete its $20,000,000 plant expansion and modernization program which includes a $10,000,000 electrochemical plant already under way at Houston, and a $10,000,000 modernization and rehabilitation program of the company's main operations at Painesville, Ohio.

Allis-Chalmers Mfg. Co., Milwaukee, Wis., has appointed E. T. Cuddeback as sales representative working out of the firm's Atlanta, Ga., district office.

The B. F. Goodrich Co., Akron, Ohio, has established a new district office of its Industrial Products Sales Div., in Cincinnati and John S. Gulledge has been appointed district manager.

Stanley Works Steel Strapping Div., New Britain, Conn., has appointed H. C. Bristoll as general manager. He has been sales manager of steel strapping for the last 19 years.

Acme Steel Co., Chicago, Ill., has elected C. J. Sharp to

TUBULAR RAYON SLITTER

Slits and winds two sets of rolls, widths from ½" up, from one length of RAYON TUBING at speeds up to 175 f.p.m.

WRITE FOR FOLDER

CAMERON MACHINE COMPANY
61 POPLAR STREET, BROOKLYN 2, N. Y.
MIDWEST OFFICE: 111 W. MONROE ST., CHICAGO 3, ILL.

FRANCIS WILLEY & CO.

STANDARD WORSTED TOPS
TOPS
SPECIAL TOPS

300 SUMMER STREET
BOSTON 10, MASS.

FLASH-DRYING SPEEDS MOISTURE ANALYSIS

The Dietert Moisture Teller is an instrument of laboratory precision which is successfully operated anywhere in the plant by non-technical personnel. By this means results are determined quickly enough to provide adequate control of many processing operations.

The amount of moisture in granular, fibrous, or crystalline materials is determined accurately, safely and without resorting to charts or involved mathematical calculations. An outstanding advantage of this equipment is that it does not lose its calibration—it is always dependable.

The Moisture Teller is available in five portable models for samples from 1 to 2000 grams in weight, each compact, self-contained and sturdily constructed.

Write for descriptive folder to Dept. M

Harry W. Dietert Company
9330 ROSELAWN AVE. • DETROIT 4, MICHIGAN

DIETERT CONTROL EQUIPMENT

YES SIR, our famous desizer... Exsize ...will cure the most chronic finishing problem.

A concentrate of natural enzymes, with not even a suspicion of harsh alkalis, acids or destructive chemicals... Exsize dilutes quickly, works smoothly, gently, gives a soft, elastic feel, a good "hand." More—a few cents' worth will desize hundreds of yards of cotton or cotton-mixed goods.

Write for our free booklet, or have our Pabst Technical man show you the extra efficiency of Exsize either in our laboratories... or, if you prefer, in your own plant.

WRITE FOR FREE BOOKLET

PABST BREWERIES

PABST SALES COMPANY

CHICAGO, ILLINOIS

Warehouses at Jersey City, and Textile Warehouse Company, Greenville, S. C.

Copr. 1947, Pabst Brewing Company, Milwaukee, Wisconsin

NEWS ABOUT SUPPLIERS

the newly created office of executive vice president. He was formerly vice president and director of sales. John Ekron Ott is named general manager of consumer products. Allen B. Wilson is named general manager of producer products.

Enjay Co., Inc., New York, N. Y., has been organized to take over the sale and distribution of all products handled by the Chemical Products Dept. Stanco Distributors, Inc., and Standard Alcohol Co. The new company, which is a subsidiary of Standard Oil Co. (New Jersey), will handle the national and export marketing of numerous products based on synthetic chemicals derived from petroleum.

General Electric Co., Schenectady, N. Y., has established an affiliated manufacturing companies department and appointed vice president L. R. Boulware as its general manager. The manufacturing affiliates include Carboloy Co. Inc., General Electric X-Ray Corp., Hotpoint, Inc., Locke Insulator Corp., The Monowatt Electric Corp., Telechron Inc., and Trumbull Electric Mfg. Co.

Fairbanks, Morse & Co., Chicago, has appointed John S. King, as manager of the Chicago branch house of the company, succeeding Frank V. Roy who retires Mar. 1.

The Bristol Co., Waterbury, Conn., has appointed H. E. Beane as general sales manager. He joined the company in 1920.

Signode Steel Strapping Co., Chicago, Ill., has appointed J. Milton Moon as sales manager. He started with the company in 1934, as field engineer.

Pittsburgh Plate Glass Co., Pittsburgh, Pa., is constructing a new $1,000,000 factory at Long Branch, Ontario, on the outskirts of Toronto, Canada.

Sun Chemical Corp., Overseas Div., New York, N. Y. has appointed Natural Products Corp., 738 Marin Ave., Montreal, Quebec, Canada, as exclusive sales agent in Canada for products of the Warwick Wax Co., a subsidiary.

Farrel-Birmingham Co., Ansonia, Conn., has appointed Arthur B. Pike as Boston area representative to handle the sale of gears and gear units manufactured at the company's Buffalo, N. Y. plant.

E M.. SCHULTHEIS, who has been appointed manager of sales of Clark Equipment Co., Battle Creek, Mich. He formerly was Detroit sales representative for the company and in 1945 assumed the position of manager of sales for the Automotive Division. On his staff will be James H. W. Conklin as sales maanger of the Tructractor Div.

Sun Oil Co., Philadelphia, has appointed Laurens H. Fritz as industrial advertising manager. He succeeds John C. Fairchild, who has resigned.

Lukens Steel Co., Coatesville, Pa., is now manufacturing a complete line of Stainless-Clad steels. Lukens began the production of its first clad metal, Nickel-Clad steel, 17 years ago. Other clad steels, Inconel-Clad and Monel-Clad, were later developed. The line offers the corrosion resistance and product protection of solid stainless steel at appreciable savings in material cost.

International Business Machines Corp., New York, has appointed Charles E. Love as general sales manager. He was previously sales manager for its western district.

Joseph T. Ryerson & Son, Chicago, Ill., has appointed Charles S. Hegel as manager of its Stainless Steel Div., and John W. Queen as manager of its Alloy Steel Div. They succeed G. Van Dyke, former head of the Ryerson Special Steels Div., retired Dec. 31, after 30 years service. Park Sanderson has been appointed manager of Ryerson's Boston plant.

Naugatuck Chemical Div. of U. S. Rubber Co, has established manufacturing facilities and western headquarters in Los Angeles.

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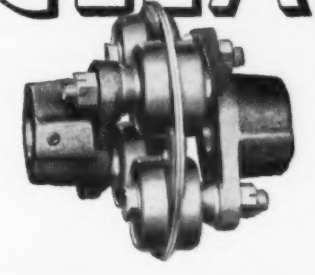

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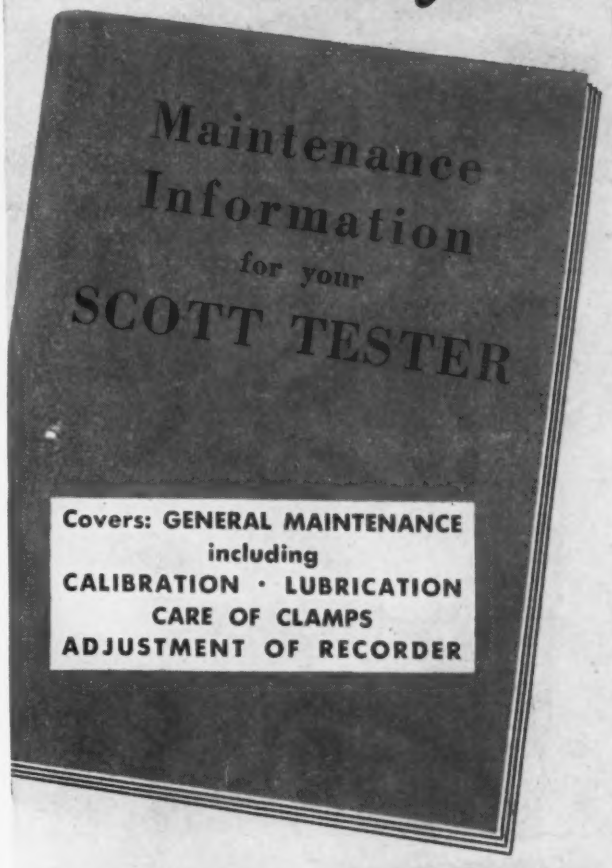

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NEWS ABOUT Mills

Cotton Mill News

Alice Mfg. Co., Easley, S. C., has awarded contract to Air Engineering Co., Charlotte, N. C., for the installation of air-conditioning systems at its Alice Mill here and at the Arial Mill, Arial, S. C. Cost is about $250,000.

Amer-Ind., Inc., New York, N. Y., has placed its Meridian, Miss., cotton mill back into full operation. No definite date has been set on closing. The mill's machinery has been sold to Brazil, but when it will be moved is indefinite.

Anderson Weavers, Inc., Anderson, S. C., plans to rebuild part of its mill, recently damaged by fire to the extent of about $80,000.

Anchor Fabrics Co., Wellford, S. C., has been established with 11 looms.

Berkshire Fine Spinning Associates, Inc., Albion, R. I., has received bids for a new slasher building. Plans were drawn by Charles A. McGuire & Associates, Providence, R. I.

Betty Yarn Mills, Kings Mountain, N. C., has been sold to Troy Whitehead Machinery Co., Charlotte, N. C., for over $100,000.

Buck Creek Cotton Mills, Siluria, Ala., has plans for a one-story addition estimated to cost over $100,000, including equipment. The project has been approved by CPA. Pembleton & Mims, Birmingham, Ala., are architects.

Clark Thread Co., Austell, Ga., has let contract for the erection of a plant, warehouse, offices, and other buildings in Thomasville, Ga. Cost is reported to be over $500,000.

Dallas Cotton Mills, Dallas, Texas, has bid for the Continental Motors plant in Garland, Texas, acting on behalf of its parent company, Horvath Mills, New York, N. Y. If the bid is accepted, Horvath Mills plans to move its Phillipsburg Textile Print Works, Phillipsburg, Pa., and its Oakes Mills, Bloomfield, N. J., into the Garland plant. The value of the equipment and machinery which would be moved is $1,000,000.

Davidson Mills, Inc., Davidson, N. C., plans the construction of a weaving-plant addition which will provide employment for 100 more workers.

Dominion Textile Co., Ltd., now carrying out a $2,500,000 expansion program at its Magog, Que., cotton mill, expects the addition now underway to be completed in the early spring. The company plans to install 657 new looms on the first floor of the new building, which is expected to involve an expenditure of about $1,000,000, including equipment. The second floor will be devoted completely to the production of filling yarns, and 108 352-spindle spinning frames will be installed. The new plant will permit an increase in production of about one-third.

East Brookfield, Mass.—Five executives of Holliston Mills, Inc., Norwood, Mass., have resigned to form their own bookcloth manufacturing and finishing plant here. Among them is R. A. Harper, head of manufacturing at Holliston Mills.

Fulton Bag & Cotton Mills, Atlanta, Ga., plans the erection of a one-story mill which will contain a total of 100,000 sq. ft. of floor space. Cost, including equipment, is reported close to $500,000.

Georgia Webbing & Tape Co., Columbus, Ga., will spend approximately $200,000 for construction and equipment in its present expansion program.

Glendale Mills, Glendale, S. C., has begun a $1,500,000 equipment, expansion, and modernization program. A large cloth press capable of handling about 64 bales of material daily has been installed. Other improvements will include the replacement of 1,000 looms and the installation of new card-

WHEN IS ONE MULE 13 TIMES Better?

WHEN IT'S A JOHNSON AND BASSETT MULE, WHICH HAS 13 ADVANTAGES OVER RING SPINNING FRAMES AS FOLLOWS: **1.** Up to 50% saving in labor. **2.** Up to 65% saving in H.P. per equal number of spindles. **3.** Up to 50% saving in floor space per equal number of spindles. **4.** Up to 67% saving in investment per comparable capacity. **5.** The J & B Mule will handle a much coarser roving than a frame, thereby increasing production at the card by 15% to 20%. **6.** The J & B Mule produces a true woolen yarn — superior in strength, elasticity, loftiness, roundness and uniformity of size and twist to that produced by frame spinning. **7.** It permits inspection of the thread. **8.** It will successfully spin short staple roving which will not hold together on a frame. **9.** Spindle for spindle, it will produce as much yarn as a frame. **10.** Its cost of upkeep is exceptionally low. **11.** The J & B filling package does not require rewinding for an automatic loom. **12.** Changes for spinning different types of yarn on the J & B Mule are easily and quickly made. **13.** Mule bobbins cost less than frame bobbins.

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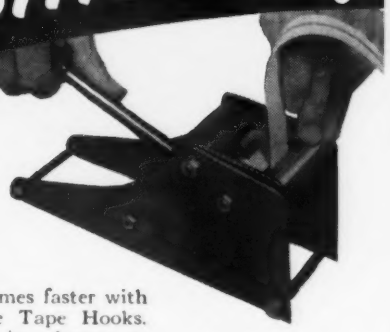
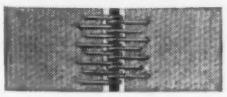


SPINDLE TAPE LACING EQUIPMENT



Lace spindle tapes 10 times faster with Clipper No. 25 Spindle Tape Hooks. Tapes can be prepared in advance so frame is shut down only long enough to place new tape on the pulleys and join ends with connecting pin. Tapes run true—last longer—run smoother—require less tension—VIBRATION IS ELIMINATED

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Lace condenser tapes with Clipper No. 25 Condenser Tape Hooks. Clipper laced tapes, prepared in advance, can be installed in a fraction of the time required for endless tapes. Tape may be purchased in the roll at considerable saving.

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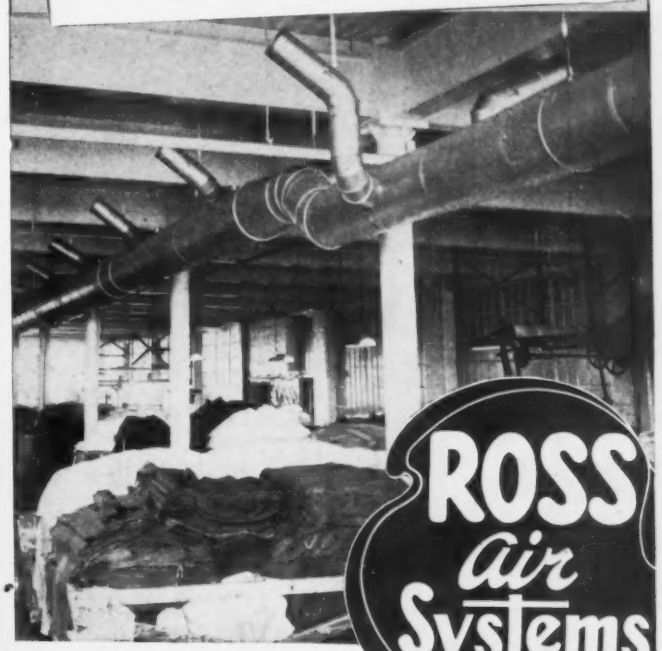

ROSS air Systems

Section of ROSS Ceiling Heating and Ventilating System in mill of Trion Co., Trion, Ga.

The time tested success of the many ROSS Air Systems throughout the pulp and paper industry naturally led to their application in the Textile Industry. Leading textile manufacturers were quick to fully utilize the expert knowledge and broad experience possessed by ROSS engineers in the field of air handling. In two major industries with basic processing problems so much alike, ROSS methods can be relied upon for equally successful results.

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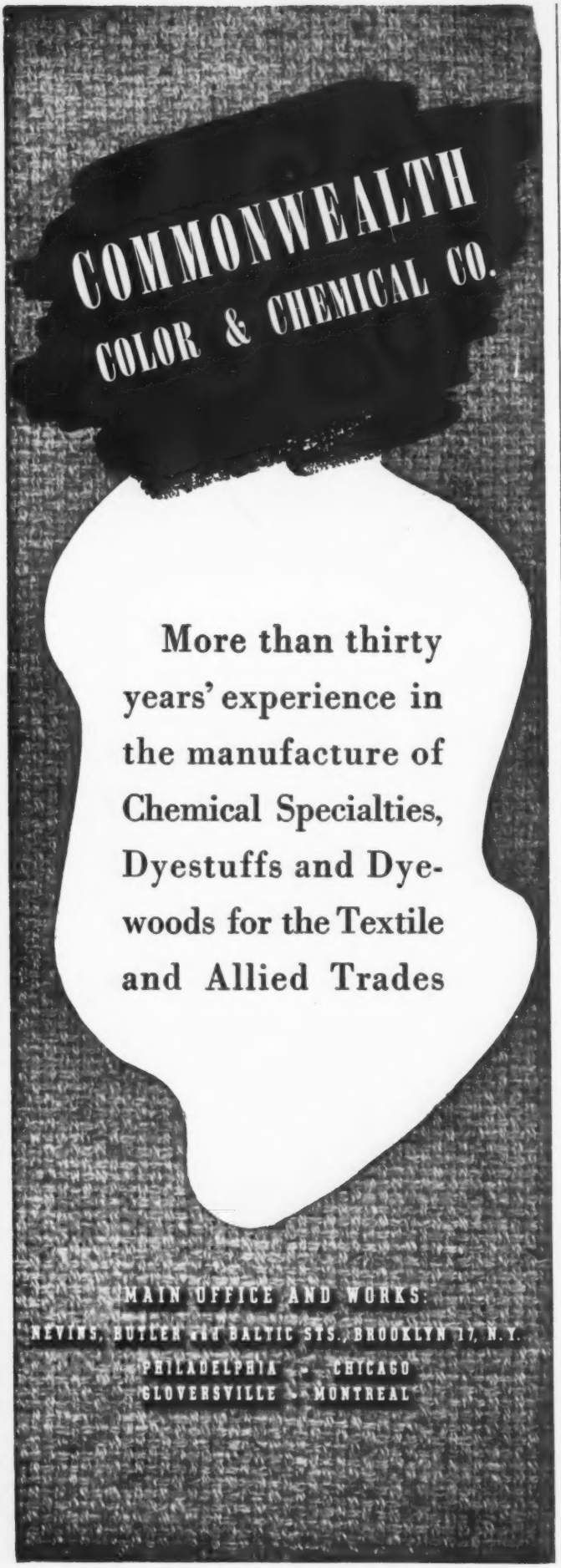
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room machinery, air-conditioning equipment, and humidifying equipment. The picker room will be overhauled also. This plant was purchased earlier this year from D. E. Converse Co. by J. E. Stifel & Sons, Wheeling, W. Va.

Granite Falls Mfg. Co. and **Granite Cordage Co.**, Granite Falls, N. C. and **Highland Cordage Co.** and **A. A. Shuford Mills Co.**, Hickory, N. C., have been merged into a corporation which will be known as Shuford Mills, Inc., with headquarters in Hickory.

Green River Mills, Inc., Tuxedo, N. C., has completed a 200 x 100 ft. addition and is installing machinery.

Joanna Textile Mills, Goldville, S. C., has let contract to Chicago Pump Co., Chicago, Ill., for equipment for a new sewage-disposal plant. Lockwood Greene Engineers, Inc., Spartanburg, S. C., are engineers.

Leading Embroidery Co., North Bergen, N. J., has a $750,000 machinery expansion and new construction program under way at its Cowpens, S. C., plant. Included in the program will be the installation of 120 looms, construction of a new weave shed and an office building, and other improvements.

Marshall Field & Co.—All mills belonging to the Manufacturing Division of this company will henceforth be known as Fieldcrest Mills.

Monroe Mills, Monroeville, Ala., has started construction on its addition and expects to have it completed by April. Fully equipped, the addition will cost $500,000. C. M. Guest & Sons has the contract.

Nashua Mfg. Co., Nashua, N. H., recently scrapped obsolete looms and machinery in its No. 5 and No. 6 mills. The move necessitated the reassignment of about 200 employees.

Proximity Mfg. Co., Greensboro, N. C., **Taberdrey Mfg. Co.**, Haw River, N. C., and **Cone Export & Com. Co.**, New York, N. Y., have merged into a corporation which will be known as Proximity Mfg. Co.

Roswell Cotton Mills, Roswell, Ga., which was purchased by Comer Machinery Co. in November, has been sold to William D. Ellis, president of Southern Mills, Inc., Atlanta, Ga., and Rutherford L. Ellis for an undisclosed sum. The sale includes mill buildings, mill village, hydro-electric power development, and power rights. The machinery has been sold to manufacturers in Argentina and Uruguay. Southern Mills plans an extensive expansion program at the Roswell mill.

Startex Mills, Spartanburg, S. C., is installing 20 64-in. looms for tablecloth goods and 159 60-in. looms for automobile cloth.

Textron Inc., New York, N. Y., in order to simplify its corporate organization, is transferring the operation of Textron Mills and Manville Fabrics, Inc., subsidiaries, to Nashua Mfg. Co., another subsidiary.

Textron Southern, Inc., will take over the Cordova, Ala., division of Nashua Mfg. Co., Nashua, N. H. Both companies are subsidiaries of Textron, Inc., which is making the transfer to concentrate all its Southern holdings under one corporate system.

Union-Buffalo Mills Co., Union, S. C., plans to convert from the production of bag goods to drills, twills, corduroy, and sheeting at its Buffalo plant. The installation of $100,000 worth of looms and equipment is now under way.

Utica & Mohawk Cotton Mills, Utica, N. Y., plans to issue $2,500,000 worth of preferred stock to finance most of the cost, estimated at $3,100,000, of completing the modernization and expansion of its plant at Seneca, S. C. Construction is now in progress at Seneca to enlarge plant facilities to house carding and spinning machinery, which will be moved from the Utica division. New high-speed looms are being delivered.

Wool Mill News

Arlington Mills, Lawrence, Mass., will soon begin the installation of new equipment and the modernization of its entire plant. Cost is reported to be $1,000,000.

Bristol Mills, Inc., Bristol, Va., a subsidiary of Bigelow-Sanford Carpet Co., Inc., Thompsonville, Conn., has purchased Norwood Woolen Mills,

ROCK RIVER WOOLEN MILLS

JANESVILLE, WISCONSIN

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Manufacturers of

FINE WOOLEN FABRICS

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Automobile Upholstery — Marine Uniform Cloth

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Here are two instruments that soon become indispensible where tension of yarn and density of packages must be frequently checked during manufacture of textiles.

These new models are basically the same as the earlier models, familiar to mill men everywhere. The differences lie in structural changes that greatly increase the sturdiness and serviceability of these precision instruments for measuring tensions and density.

TENSOMETER

The Sipp-Eastwood Tensometer will enable you to detect causes of faulty tensions in warping, winding, and quilling. The Tensometer is handy—slips readily into your pocket—is available to test tensions at all times. It saves its cost in a short time.

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The Sipp-Eastwood Densimeter measures the density of packages. From its readings it is possible to insure equal density on cops and quills. Its use enables you to obtain for a given yarn the proper density of the packages. When the proper density of the quill or cop has been determined with the Densimeter, the copper or quiller tension may be checked with the Tensometer, and, if all tensions are set alike, packages of uniform density will result.

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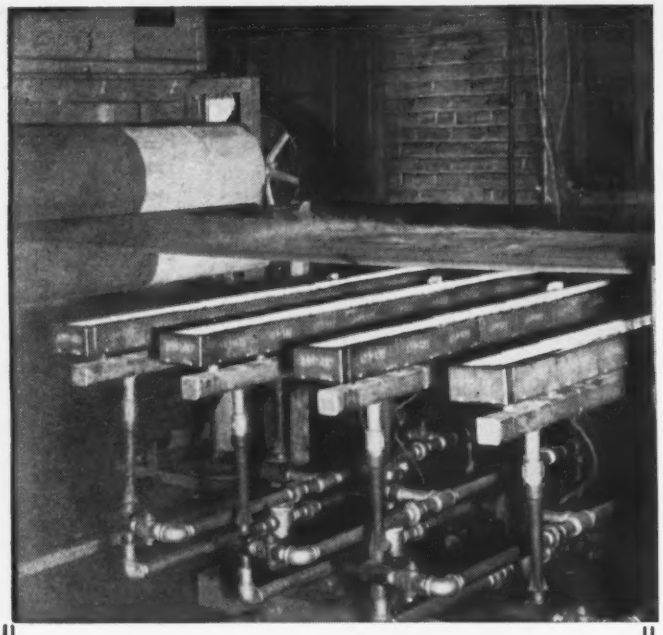

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Bristol. No change in the management of the mill is contemplated, and operations will proceed without interruption. G. H. Buckles will continue as general manager and John Gentry as superintendent. The plant will produce woolen yarn for carpet production at the parent company's plant at Amsterdam, N. Y., and Thompsonville.

Coosa Valley Mills, Talladega, Ala., has been newly formed to spin worsted knitting and weaving yarns. New machinery has been purchased and the building formerly occupied by Samoset Mills and now owned by Wehadkee Yarn Mills will be used.

Congoleum-Nairn, Inc., Kearny, N. J., has secured CPA approval for a $3,000,000, 60 x 700 ft., one-story addition to its Cedarhurst, Md., felt mill.

Crown Mfg. Co., Pawtucket, R. I., is experimenting with the manufacture of worsteds on a modified cotton system. The company is expanding steadily and aims to increase its present labor force of 800 to 1,000 or more.

Lloyd A. Fry Roofing Co., Portland, Ore., has applied for CPA permission to erect a $172,000, 154 x 465 ft., one-story plant for the production of roofing felt.

Hargo Woolen Mills, New Bedford, Mass., recently organized, is operating part of its machinery and the rest is expected to be running by the end of February. The plant is located in part of the old Dartmouth Mill building and occupies 25,000 sq. ft. of floor space. The estimated financial outlay in setting up the plant is, to date, about $200,000.

Kroy Unshrinkable Wools, Ltd., Toronto, Ont., is establishing a subsidiary processing plant in Lowell, Mass.

McCormick Spinning Mill, Inc., McCormick, S. C., is rapidly nearing completion and expects to be in operation in the early spring. The one-story plant will be equipped with modern machinery for spinning wool yarns.

Mohawk Carpet Mills, Inc., Amsterdam, N. Y., has been virtually cleared by the War Assets Administration to proceed with plans to set up operations at the former New River ordnance plant, Dublin, Va.

Mt. Vernon-Woodberry Co., Baltimore, Md., will soon have in operation a pilot plant for the production of worsteds and blends on a modified cotton system. Machinery is now being installed and additional equipment is on the way.

Pacific Mills, Boston, Mass., has made the first move toward the erection of a 1,500-employee plant in Altavista, Va., on the 600-acre site.

M. T. Stevens & Sons Co., Andover, Mass., has received CPA approval for construction of a $764,980 woolen mill in Dublin, Ga., and construction is expected to get under way early next year.

Winthrop Woolen Mill, Winthrop, Me., is currently spending about $500,000 for new equipment; and Allen Goldfine, owner of the company, is reported to be interested in purchasing Royal Woolen Mills, Sabattus, Me.

Rayon & Silk Mill News

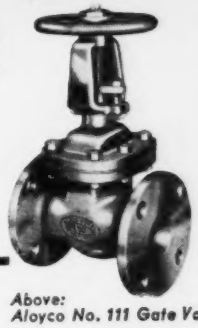
Berwick Weaving, Inc., Berwick, Pa., plans a new one-story addition which will cost close to $140,000, including equipment.

M. E. Binz Co., Montreal, Que., plans an expansion program which will involve the expenditure of over $1,000,000. By the middle of 1947, the company expects to have a new nylon-weaving division, a drapery division, a 25% increase in production capacity, and a total of 1,500 employees.

Burlington Mills Corp., Greensboro, N. C., is going ahead with its expansion program just as fast as it can construct buildings and obtain machinery. The extension under way at the Roanoke Weaving Co., Roanoke, Va., is expected to be ready for use in February and will permit the employment of an additional 150 workers. The Salem, Va., hosiery plant was enlarged last year, and some equipment was added at Covington, Va. The company has completed arrangements for a 20-yr. loan of $15,000,000 with Prudential Insurance Co.

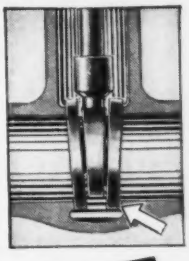
Celanese Corp. of America, Cumberland, Md., has given

This GATE VALVE makes assurance DOUBLY SURE



Above:
Aloyco No. 111 Gate Valve

Below:
View of double-disc wedge



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impetus to its program of long-range expansion by the addition of $25,000,000 to its cash reserves through the private sale of debentures.

John Hand & Sons, Inc., Paterson, N. J., has completed a new one-story plant containing 22,600 sq. ft. of floor space. Operations are expected to begin about Mar. 1 with 28 looms. Thirty-two additional looms are on order.

Mooresville Mills, Mooresville, N. C., will erect a new plant this year at a cost of $700,000. In addition, the company will spend approximately $150,000 for the latest-type finishing equipment and $150,000 for looms.

Riverside Silk Mills, Ltd., Galt, Ont., which is expanding the weaving department at its Mitchell, Ont., plant, designed the first new unit to accommodate 100 looms and will add another 100 later.

Seminole Mills, Clearwater, S. C., plans expansion and improvements including the installation of new wide looms and other equipment. Several additions will be built. Cost of the program is estimated at $2,500,000.

William Skinner & Sons, Holyoke, Mass., has new looms on order and expects delivery sometime in 1947.

Taylorsville, N. C.—Isadore Schnigder, of Bergen County, N. J., has purchased a site for a silk-weaving mill to produce women's silk underwear fabric.

United Merchants & Manufacturers, New York, N. Y., will erect a $446,020 rayon plant in Clearwater, S. C., to replace one destroyed by fire.

Verney Taunton Mills, Inc., Taunton, Mass. has received bids for an industrial-waste and sewage plant designed by Metcalf & Eddy, Boston, Mass.

Knitting Mill News

Belmont Hosiery Mills, Belmont, N. C., is completing a large building which will be its No. 2 plant. Machinery is already being installed in the structure, which is air-conditioned and equipped with fluorescent lighting.

Conover Knitting Mill and **Warlong Glove Mill,** Conover, N. C., are erecting a modern building which they will occupy jointly, probably in September.

Ellis Hosiery Mills, Inc., Philadelphia, Pa., has purchased the Marshall, N. C., plant of Virgin Mills, Inc. This plant, which spins cotton, will continue operations with W. H. Smith as general manager.

E-Z Mills, Cartersville, Ga., plans the construction of a $75,000 one-story addition to its knitting room which will add 15,000 sq. ft. of floor space.

Fine Art Lace Co., Philadelphia, Pa., will take bids soon for a new one-story addition which will cost over $125,000, including equipment. Frank V. Nickels, Lansdowne, Pa., is architect.

Gastonia Full-Fashioned Hosiery Mill, Gastonia, N. C., has changed its name to Wisteria Hosiery Mill.

Helen Hosiery Mills, Helen, Ga., recently began operations in a new mill which will employ 150 women. A dye plant to be operated in conjunction with the hosiery mill will employ 150 men.

Hollar's Hosiery Mill, Hickory, N. C., will open a branch plant in Yadkinville, N. C.

Hudson Bros. Hosiery Mill, Fairton, N. J., was recently damaged to the extent of $75,000 by fire.

Jantzen Knitting Mills, Portland, Ore., plans to establish a branch plant in Vancouver, Wash.

Luxor Textile, Inc., St. Johnsville, N. Y., has been sold to William Heller, New York, N. Y. R. R. Rhines, formerly president, will continue as general manager. The new owner plans to expand the plant.

Melrose Hosiery Mills and **Glenn Hosiery Co.,** High Point, N. C., have announced an expansion program which will add 70,000 sq. ft. of floor space, including an 800-machine knitting room for seamless hosiery and facilities for finishing full-fashioned nylon hosiery.

Memphis Knitting Mills, Inc., Memphis, Tenn., has a 40 x 60 ft. plant under construction and expects to have it in operation about Feb. 15.

Pilot Hosiery Mills, Valdese, N. C., has bought about five acres of land at Lenoir, N. C., and plans to erect a full-fashioned hosiery mill.

Famous Firsts

THE FIRST BIFOCALS were devised by Benjamin Franklin, who was a practical inventor as well as a statesman, author and publisher. Annoyed at having to carry two pairs of glasses, one for reading and one for "seeing," Franklin had one pair split in half and remade so that each eye had two different lenses.

THE FIRST KNITTING MACHINE to produce an interlock fabric, a special type of rib fabric distinguished for superior softness, warmth and strength, was the Scott & Williams Interlock Machine, developed by S&W in 1908.

Originally designed for producing underwear to be worn in cold, damp countries, this fabric is today in increasing demand in this country for use in outerwear such as sweaters, sleeping garments and polo shirts for men, women and children.

Thus does a typical S&W "famous first" contribute to the advancement of the knitting industry and build markets for the sale of circular knit goods.

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CONTINUOUS WELDED ALUMINUM CONSTRUCTION

accurately machined after welding to assure a true-running beam with a smooth, permanent finish!

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also made special to meet specific conditions

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Coming . . . A NEW ALUMINUM SECTION BEAM

Incorporating many improved features advantageous to the yarn manufacturer and the processing mill.

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Let us demonstrate the advantages of this new aluminum Tricot Beam

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Manufacturing Warp Beam Specialties

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Portsmouth, Va.—Work has started on the construction of a new mill to produce men's hosiery. The plant will represent an investment of $500,000. John D. Gorman and J. J. Eaton, formerly superintendent of Parker Hosiery Mill & Dye Works, Portsmouth, will be superintendent.

Propper-McCallum Hosiery Co., Florence, Mass., will soon occupy the new addition which is now being built. The new unit, providing 2,600 sq. ft. of floor space, will be air-conditioned and have the latest type of industrial lighting.

Shannon Hosiery Mills, Inc., Columbus, Ga., will double production when additional materials and machinery, now on order, are received. Norman S. Illges is president.

Stortz Hosiery Mill, Fort Atkinson, Wis., has begun operations in a new building and is producing 54-gage hosiery with 16 machines.

Waldensian Hosiery Mills, Valdese, N. C., has purchased a site in Lenoir, N. C., on which it will erect a seamless-hosiery mill.

Walton Full-Fashioned Hosiery Mill, Dallas, Texas, began operations shortly after Jan. 1. Enough machinery has been purchased to produce 300 doz. pairs of women's hosiery a week. James D. Walton, who recently resigned as superintendent of Gastonia Full-Fashioned Hosiery Mill, Inc., Gastonia, N. C., manages the plant.

Dyeing & Finishing Plant News

Allied Textile Printers, Paterson, N. J., has purchased for $100,000 three city-owned buildings which it already occupies. The company will spend $1,232,000 for alterations, repairs, and a new building.

Apponaug Co., Apponaug, R. I., has separated from Mills, Inc., Taunton, Mass., and is once again a corporate entity. For the last 2½ years Apponaug Co. has operated as a unit of Mills, Inc. George V. Meehan, president of Mills, Inc., will remain as president of Apponaug, and Frederick G. Brown will be executive vice president and general manager.

Bibo-Castle Corp., 851 Market Street, San Francisco, Cal., has asked for bids on a new plant to be erected in Santa Clara, Cal. Plans call for seven one-story buildings which will cost $500,000, including equipment. Grieshaber & Neilan, New London, Conn., are architects.

Burlington Mills Corp., Greensboro, N. C., has obtained a partial permit which will allow it to begin construction of a finishing plant in Wake Forest Township, N. C.

Dominion Burlington Mills, Ltd. is completely renovating the Montreal, Que., plant formerly occupied by Colonial Bleachery of Dominion Textile Co., Ltd. Machinery for rayon dyeing and finishing is on order.

Erie Dyeing & Processing Co., 2765 East 55th St., Cleveland, Ohio, has let contract to Austin Co., Cleveland, for a 160 x 180 ft. two-story plant which will cost over $125,000, with equipment.

Lowell Bleachery, Griffin, Ga., has received CPA approval for construction of a $175,000 dyeing and finishing plant. J. E. Sirrine & Co., Greenville, S. C., prepared the plans.

Newport Finishing Co., Fall River, Mass., has purchased the No. 2 bleach house and the boiler house of the former Stevens Mfg. Co. and will move to the new location as soon as renovation is completed.

Riegel Textile Corp., plans completion by Mar. 1 of its new $1,000,000 dyeing and finishing plant in Ware Shoals, S. C. The mill will have 40,000 sq. ft. of floor space and employ 150 workers. It is being laid out for fast-color and continuous dyeing, and will be used for finishing synthetic and blended fabrics. The structure will be windowless, spot-cooled, and equipped with fluorescent lighting.

J. W. Stifel & Sons, Wheeling, W. Va., has awarded contract to Engstrom & Wynn, Wheeling, for construction of a three-story addition to cost about $270,000, including equipment. Charles T. Main, Inc., Boston, Mass., did the engineering.

Universal Dye Works, Philadelphia, Pa., has a new plant for dyeing and finishing hosiery at Wissinoming and Friendship Sts. in the Tacony section. The dyeing and finishing divisions are now under one roof.

THE

WINNING

PREMIUM YARN

Spun Rayon
and
Blends

UNITED YARN PRODUCTS COMPANY

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in processing cotton from bale to bolt, DIAMOND FINISH rings promote maximum spinning and twisting production, with quality always under control.

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We make holders for ¾" to 2½" bobbin heads, including large-package wood and paper bobbins, also special bobbins. Duplex holders take both automatic and non-automatic bobbins.

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BARE ELECTRIC CONDUCTOR &
RESISTANCE TINSEL CORDAGE
DECORATIVE TINSEL — LAME —
THREADS — CORDS — LAMINETTES
NOVELTY YARNS

NEWS ABOUT *Men*

F. E. Grier has been elected president and treasurer of the newly-formed corporation which recently purchased Brandon Corp., Greenville, S. C., and which will operate under the same name. **C. E. Hatch**, formerly president of Brandon Corp., has been elected chairman of the board. Other officers include **H. E. Runge**, executive vice president; **John I. Smith**, secretary; **John S. Abney**, assistant treasurer; **E. W. Seigler**, second vice president; **W. B. Perrin**, general manager; and **A. W. Smith**, assistant general manager.

Meyer H. Korn has been elected president of Bangor Mills, Inc., Bangor, Me., succeeding **Arthur H. Maisner**, who resigned. Other officers elected were **George H. Korn** vice president and secretary; **Samuel H. Korn**, treasurer; and **A. L. Coradi**, vice president.

I. C. Milner, who has been vice president and general manager of Gate City Cotton Mills, Atlanta, Ga., has been elected president to succeed **W. C. Bradley**.

G. W. Marshall, Jr., general manager of the Asbestos Textile & Packing Div., Raybestos-Manhattan, Inc., has been elected president of Asbestos Textile Institute, Philadelphia. Other institute officers elected include: **George S. Fabel**, of Southern Asbestos Co., vice president; and **William C. Scott**, of Keasbey & Mattison, treasurer. **Harris D. McKinney** is institute manager.

O. L. Ward has been appointed superintendent of the Gastonia, N. C., plant of United States Rubber Co., and **Donald Carroll** has been named to succeed him as superintendent at Scottsville, Va. Mr. Ward succeeds **Don Maddox**, who is resigning to pursue other interests.

James L. Braman, first vice president and treasurer of F. C. Huyck & Sons, Kenwood Mills, Rensselaer, N. Y. has been named chairman of the board to succeed **Holden M. Ashby**, resigned.

Arthur F. Lole has been elected president of J. & J. Cash Co., South Norwalk, Conn., succeeding the late Frank Goodschild. Mr. Lole had previously been vice president and treasurer.

Joseph Loper, Jr., will succeed his father, who died recently, as president of Royal Woolen Mills, Sabbatus, Me.

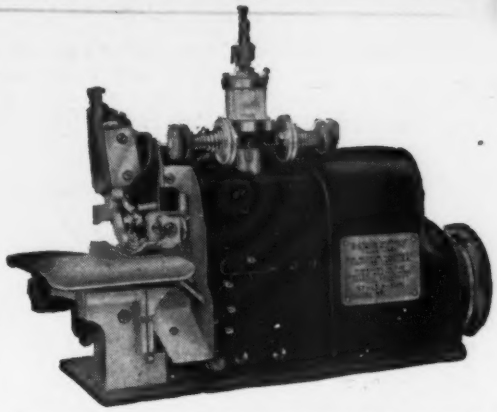
L. A. Dunbar is now president and general manager of Riverside Silk Mills, Ltd., Galt, Ont.

Ralph W. Conant, president and a director of Emery & Conant Co., Inc., Boston wool house, since 1937, has resigned as of March 31, 1947, to establish a new corporation to conduct a wool business in Boston. Mr. Conant was a partner in Studley & Emery, Boston, for 16 years prior to the organization of the present establishment.

Alfred A. Reed, president of Ripon Knitting Works, Ripon, Wis., has been elected chairman of a special committee created by the National Association of Hosiery Manufacturers to develop and recommend a standard method for measuring the shrink resistance of wool hosiery.

J. Wilbert Wood has succeeded **L. D. Pitts** as president and treasurer of Industrial Cotton Mills, Rock Hill, S. C. Mr. Wood was formerly vice president and general manager of Textron Southern, Inc., at Anderson, S. C.

Fred L. Watson is the new president of Charlottesville Woolen Mills, succeeding his brother, the late Robert A. Watson. **John H. Robinson**, general manager of the company, was named a member of the board of directors to fill the



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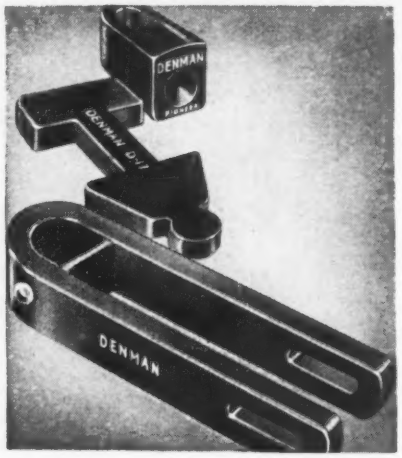

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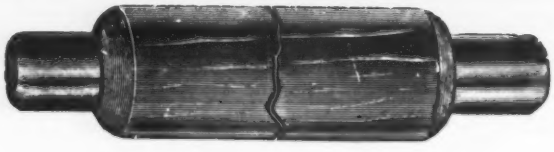

DYE STICKS

Since 1900 we have made high quality true-form over-seasoned dye sticks for all standard machines. We can fill your needs today to meet any requirements. Write

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vacancy resulting from Mr. Watson's death.

Selby R. Groff has resigned as vice president and general manager of Salter Mills and M. Salter & Sons, Saugus, Mass., to become co-owner and treasurer of Wamesit Processing Co., Wamesit, Mass.

Dwight L. Lawton has been elected president of Thomas L. Leedom Co., Bristol, Pa. He succeeds **Robert J. Carson,** who retired but will remain as consultant to the management. **William L. Lloyd** has been elected vice president and treasurer.

Sylvan H. Edwards has resigned as secretary and treasurer of the Fabrics Corp. of America, New York, and has formed the Sylvan H. Edwards Corp. to serve as mill representative in woolens and worsteds.

Joseph F. Merten has joined Greenwood Mills, Inc., New York office to be identified with the Rayon Department principally in relation to quality control.

A. C. Phelps, personnel and safety director of the Brandon Mill, Greenville, S. C., has been elected chairman of a steering committee to plan a program of work for a Greenville county safety committee which will be formally organized. Mr. Phelps is a member of the executive committee of the National Safety Council.

Howard R. Medici, vice president of Visking Corp., Chicago, Ill., will be general manager of the company's three plants in Clearing and Joliet, Ill., under a new organization plan. **Gustav Freund** and **A. G. Hewitt,** vice presidents, will head the Preston and Terre Haute, Ind., and Little Rock, Ark., divisions.

Charles V. Banks, general manager of Harding Carpets, Ltd., Brantford, Ont., has been named executive vice president of the company. **C. Malim Harding** has succeeded him as general manager.

Joseph L. Lanier has been elected executive vice president of West Point Mfg. Co., West Point, Ga., and Dixie Cotton Mills, LaGrange, Ga. **Joseph L. Jennings** was elected vice president in charge of operations, and **Earl M. Heard** was cus Hook, Pa., has resigned his named vice president in charge of research. **Lee Tillery** succeeds Mr. Jennings as superintendent of the Fairfax Mills division.

Albert J. Owler is resigning as vice president in charge of manufacturing for Verney Corp., Boston, Mass. It is understood that he will go into business for himself to produce rayon fabrics.

John M. Lindeke, vice president and secretary of North Star Woolen Mills Co., Minneapolis, Minn., has been made resident vice president and general manager of the Minneapolis division. **H. C. Whitehouse** has taken over similar duties with the recently-purchased Wakefield, R. I., division. **W. E. Morse** was made assistant plant manager of the Minneapolis division.

Leonard F. Smith has been appointed advertising and sales promotion manager of Wellington Sears Co., New York. Until recently, Mr. Smith has been associated with the Plastic Film Corp., and previously was for 15 years advertising and sales promotion manager for the Tubize Rayon Corp.

W. E. Benedict has been named advertising and sales promotion manager of Nashua Mfg. Co., Inc., New York. He has been advertising and publicity director of Callaway Mills, Inc.

G. Lawson Ivie, formerly sales manager of Domestics, has been appointed assistant general sales manager of all the Fieldcrest Mills, Division of Marshall Field & Co., Inc., New York. There are eleven mills in the Fieldcrest Mills group. **Arthur S. Thompson,** formerly assistant domestics sales manager, has been appointed sales manager of all the Fieldcrest domestics line.

Wheaton Kittredge, Jr., became associated with William Whitman Co., Inc. on Feb. 1 and will have charge of wool buying for all units of the Whitman company. He will make his headquarters at the Arlington Mills Div. in Lawrenc, Mass. He has been with Botany Worsted Mills for the last 12 years.

James A. Hopwood, of Textile Research Department, American Viscose Corp., Mar-

Perfect Butted Seams for Faster and Smoother Finishing

The Rayer & Lincoln Rotary Sewing and Marking Machine, fitted with the latest *Dinsmore Improved Positive Stripping Attachment* and showing the application of the *Merrow Butted Seaming Head.* Sews a strong, flat, butted seam, trims the goods evenly with a narrow margin and automatically marks each piece as sewing is done. This machine will save its cost each year—you need it for modern, low-cost finishing. The Merrow Butted Seaming Head can be applied to your present machine—write for estimate of cost.

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Machine and Hand Knitting
Yarns
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Complete color assortments

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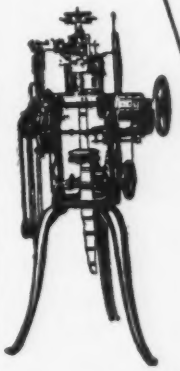
UP GOES PRODUCTION
DOWN COMES OVERHEAD
WITH *BRINTON*
CIRCULAR KNITTING MACHINES



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GUARANTEED LEAK-PROOF "DIAMOND"
REVOLVING JOINTS

permanently end leaking and stuffing box trouble on all kinds of
Steam-Heated and Water-Cooled Rolls
No tight packing to act as brake on roll.

Patented construction. Many in use 10 years or more. Specially compounded molded gasket lasts up to 15 months in severest service — easy, quick and inexpensive to replace. We also manufacture leak-proof SWING JOINTS and BALL JOINTS. Bulletin and price list upon request.

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position as head of the department's dyeing and finishing division to join Colonial Mills, New York.

Samuel Katz has resigned as an officer and director of Brooklyn Yarn Dye Co., Inc., Brooklyn, N. Y. **A. J. Stone** is president.

D. R. Wilson has been appointed director of economics at the International Wool Secretariat, New York, succeeding **Dr. Gerda Blau,** who recently left to take up duties with FAO in Washington.

W. J. Holman, Jr., vice president of Chicopee Mfg. Co. of Georgia and general manager of its Lumite Div., has been elected a director of the company. He joined Chicopee as an electrical engineer in Gainesville in 1940.

William Zopfi, superintendent of Waumbec Mills, Manchester, N. H., has been named vice president of the company.

Harold A. Short, managing director of Kenwood Mills, Ltd., Arnprior, Ont., has been elected managing director and vice president of the company.

E. C. Wilson has been named executive vice president of Munsingwear, Inc., Minneapolis, Minn.

Garnett Andrews, Jr., was elected vice president of Rockwood Mills, Rockwood, Tenn., succeeding his father, the late Garnett Andrews, Sr.

Charles A. Dill, formerly secretary, has been elected treasurer and a director of Utica & Mohawk Cotton Mills, Utica, N. Y., succeeding **Charles F. Fingerhut,** who recently retired. **Earl S. Liberty** has been named secretary and **Charles E. Ferguson,** assistant secretary.

George Cutter has resigned as general manager of the Rock Hill, S. C., plant of Gold Tex Fabrics, Inc. **Erich F. A. Paul,** vice president, will assume the management of the mill, and **George L. Melton** will be plant superintendent and production manager.

Walter J. Briden has been elected secretary and treasurer of Sayles Finishing Plants, Inc., Saylesville, R. I., and Sayles Biltmore Bleacheries, Inc., Biltmore, N. C. He had previously been assistant secretary and assistant treasurer and, in his new posts, succeeds **Ethelbert Harman.**

Carl A. Johnson, formerly general superintendent of Lonsdale Co., Providence, R. I., has been made general manager of the Fisher mill of Fisher Mfg. Co., Fisherville, Mass.

Mrs. Fanny Blumberg has succeeded her husband, **Abraham Blumberg,** recently deceased, as secretary-treasurer of Y & B Hosiery Co., Reading, Pa.

David P. Savage has been appointed manager of Maitland Spinning Mills, Ltd., Listowel, Ont.

A. A. Erlander, William W. Collins, and **William Morris** have been named credit manager, assistant credit manager, and office manager, respectively, of Nashua Mfg. Co., Nashua, N. H.

Raymond K. Flege, formerly research director of North Star Woolen Mills Co., Minneapolis, Minn., has become manager of the company's Minneapolis plant.

Alex T. Herron, for 17 years general superintendent of A. D. Juilliard Corp.'s New York Mills, has resigned to accept the post of agent with Clark Mills Co., Inc., Clark Mills, N. Y. He will continue to reside in Utica, N. Y.

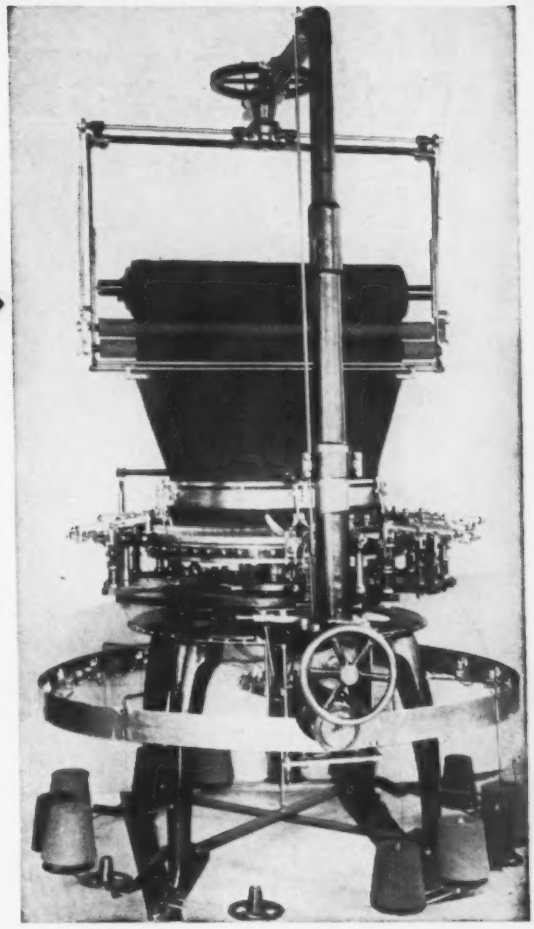
William L. Hugo, procurement specialist in textiles at the Army Quartermaster Purchasing Office in New York, is retiring from government service and will join Deering, Milliken & Co., Inc., New York, N. Y., as assistant to **W. J. O'Shaughnessy,** who is in charge of quality control.

J. R. Davison has become general manager of Royston Mills, Inc., Royston, Ga., and **Nathan Dearman** has become superintendent.

Emery N. Cleaves has been appointed assistant to **Harold Blancke,** president of Celanese Corp., Cumberland, Md. Mr. Cleaves was formerly a consultant on management problems.

Charles E. Lyons has been made vice president of Warrenton Woolen Co., Torrington, Conn.

Single Head Spring NEEDLE Knitting Machine



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The New S-1 Single Head Spring Needle Machine is especially designed for overcoating materials. At the same time, *any* fabric can be knit on it that is knit on the older type spring needle table!

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NO POINTS TO BREAK OR MAR.
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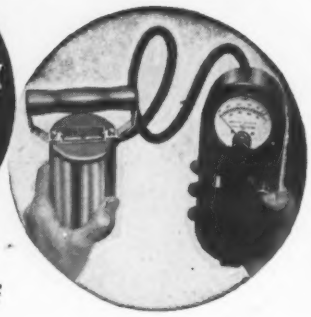

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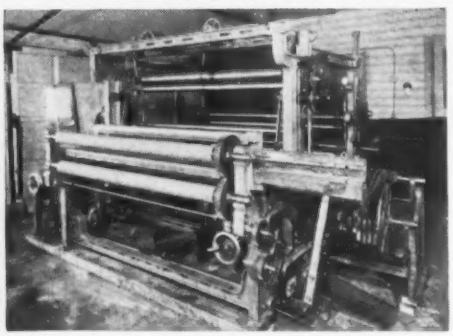

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NEWS ABOUT MEN

Robert E. Boyaval has succeeded **Robert C. Price** as general manager and treasurer of Masurel Worsted Mills, Inc., Woonsocket, R. I.

James A. Hopwood has resigned as head of the dyeing and finishing division, textile research department, American Viscose Corp., Marcus Hook, Pa., to join Colonial Mills, New York, N. Y.

George Johnson, formerly with the textile research department of American Viscose Corp., Marcus Hook, Pa., has joined William Heller, Inc., New York, N. Y.

Frank H. Ernst has been appointed director of production in the rayon division of E. I. du Pont de Nemours & Co., Wilmington, Del. He succeeds **George E. McClellan,** whose assistant he had been and who was recently appointed assistant manager of the rayon division.

Don Maddox, formerly superintendent of Ruby Cotton Mills, Gastonia, N. C., recently purchased by U. S. Rubber Co., has become general superintendent of manufacturing operations for Textiles, Inc., Gastonia. He succeeds **Theodore Morris,** who resigned.

J. B. Reynolds has been appointed staff assistant to **J. M. Norman, Jr.,** manager of Karastan Rug Mill, Leaksville, N. C., and will be in charge of production control and related activities. **J. E. Cobb** has been named assistant superintendent in charge of the threading, wrapping, and weaving departments.

O. L. Ward has been appointed superintendent of the Gastonia, N. C., plant of U. S. Rubber Co., succeeding **Don Maddox. Donald Carroll,** assistant to **R. C. Harrington,** technical director of the company's textile division in New York, takes over Mr. Ward's former position as superintendent of the Scottsville, Va., tire-cord plant. Mr. Carroll in turn is being succeeded by **Leonard D. Swearingen,** who had been technical supervisor in the New Bedford, Mass., plant.

E. S. Cobb has become resident manager of the spinning divisions of Sidney Blumenthal & Co. at Valley Falls, R. I., and Woonsocket, R. I. **Herbert Gregson,** formerly resident manager, will now act as general consultant to the company.

Robert L. Richards has been appointed assistant general manager of the rayon department of E. I. du Pont de Nemours & Co., Wilmington, Del. He was succeeded as an assistant manager of that department by **William Schackelford,** who had been manager of the acetate division. **George E. McClelland,** director of production of the rayon division is now, in addition, an assistant manager of the rayon division.

Obituary

John W. Wallace, 50, president and treasurer of the Statesville Cotton Mills since 1944, and former State Senator, died Jan. 28 in Statesville, N. C. His father, the late William Wallace, was organizer and first president of the mill.

Paul E. Sutro, 80, for many years in the hosiery business in Philadelphia as president of E. Sutro & Son Co., died late in January at Lake Wales, Fla. Mr. Sutro was a director of Wildman Mfg. Co., Norristown, Pa. Before his retirement he was active in trade association affairs.

Harry Lennard, 88, president of S. Lennard & Sons, Ltd., Dundas, Ontario, Canada, died Jan. 1. Mr. Lennard was a pioneer in textile manufacturing in Canada having settled in Dundas in 1871. He was a native of Leicester, England.

John Minot Hall, 79, Franklin, N. H., head of the Meredith Linen Mills for many years, died Jan. 1.

Frederick Reading, founder and president of the old Western Reserve Woolen Co., died recently in Cleveland, Ohio. Mr. Reading founded his organization in 1895 and retired in 1932.

Oscar Heineman, 83, president of Oscar Heineman Corp., Chicago, Ill., died recently in Chicago.

Henry M. Sessions, 66, presi-

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Charles F. Rogers, Jr. — Manager

dent of Sessions-Gifford Co., Providence, R. I., died Jan. 10. He was at one time associated with the Providence Drysalters Co. He then became vice president and manager of the textile division of the Borden & Remington Co., and in 1928 entered a partnership and became president and director of the Sessions-Gifford Co.

Henry A. Woodhead, 63, vice president of the Graniteville Co., died at Aiken, S. C., Jan. 13. He joined the Granite Linen Mills, Wortendyke, N. J., and became manager of the plant in 1912. In 1917 he resigned to assume charge of the mill and bleachery of the Phoenix Linen Co., North Brookfield, Mass. In 1925 he went to Graniteville as superintendent of the Gregg Dyeing & Finishing Co. plant.

Hugo R. A. Schumann, 77, president of Ready-Made Hosiery Co., and of Iris Hosiery Co., died recently in Reading, Pa. Mr. Schumann was also head of the Aeronautical Supply Co.

Louis E. Goodman, 86, retired industrialist of Harriman, Tenn., died there recently. At one time he was president and general manager of the Cumberland Gap Woolen Mills.

Mrs. Bettie Gibson Ragan, 75, for many years vice president and a director of Ragan Spinning Mill, Gastonia, N. C., died Jan. 5.

O. Oscar Bast, 73, retired after many years as a manufacturer of knit underwear in Schuylkill Haven, Pa., died Dec. 26.

Charles F. Angell, 65, dean of West Texas wool buyers, died Dec. 27 in Boston, Mass. He was senior partner of Angell, Bronsdon & Dupont Wool Co.

Clifford M. North, 48, the New England vice president for B. D. Kaplan & Co., died Dec. 24 in Andover, Mass.

Roland B. Ambrose, 53, vice president of Portland Woolen Mills, Portland, Ore., died Jan. 10.

Webster Jones, 60, a leading Providence textile manufacturer, died Jan. 12. He was associated with the G. H. Waterman Co., Providence, R. I., as treasurer, and during 1946 severed his connection with that company to become an executive of the Chemo-Textile Co.

Robert Morse, president of W. S. Libbey Co., Inc., New York, and vice president of W. S. Libbey Co. mills at Lewiston, Maine, died Jan. 24. He had been an executive of the Libbey organization for nearly 20 years.

John T. Ryan, 56, operating manager of United States Rubber Co., Philadelphia, Pa., died Dec. 27. He was with the company for 41 years and was in charge of its plants in Boston, Mass., and Syracuse, N. Y. before coming to Philadelphia four years ago.

Wilfred L. Robertshaw, for the last 23 years an official of the Southern Worsted Co., Greenville, S. C., died recently at his home in Tryon, N. C.

Vincent John Brennan, Jr., 63, former agent of Brampton Woolen Co., Newport, N. H., died recently in Hillburn, N. Y., where he had been recuperating after a long illness.

Henry B. Sawyer, 61, a wool broker associated with James H. Barnard, Boston, died at Cambridge, Mass., Jan. 18.

Elisha H. Cooper, 77, general manager of E. E. Hilliard Co., Buckland, Conn., from 1892 to 1911, died Jan. 4 while vacationing in Daytona Beach, Fla.

S. Eugene Jackson, 62, former sales manager and assistant treasurer of Crown Mfg. Co., Pawtucket, R. I., died at Providence, R. I., Jan. 19.

W. E. Brown, sales manager of American Wringer Co., Woonsocket, R. I., died Dec. 25.

William A. Floyd, assistant treasurer of Victor-Monaghan Mills Co., Greenville, S. C., died Dec. 25.

James Arthur Wooten, 62, retired textile executive, died Jan. 7 at Rock Hill, S. C. He was first associated with Springstein Mills. In 1918 he moved to Rock Hill, where he was connected with Highland Park Mfg. Co., and later became superintendent of Industrial Mill, until 1942, when he retired.

Henry C. Seidel, 86, father of C. Walker Seidel, Chicago yarn dealer, died in Chicago on Jan. 19. The senior Mr. Seidel came to Chicago 60 years ago.

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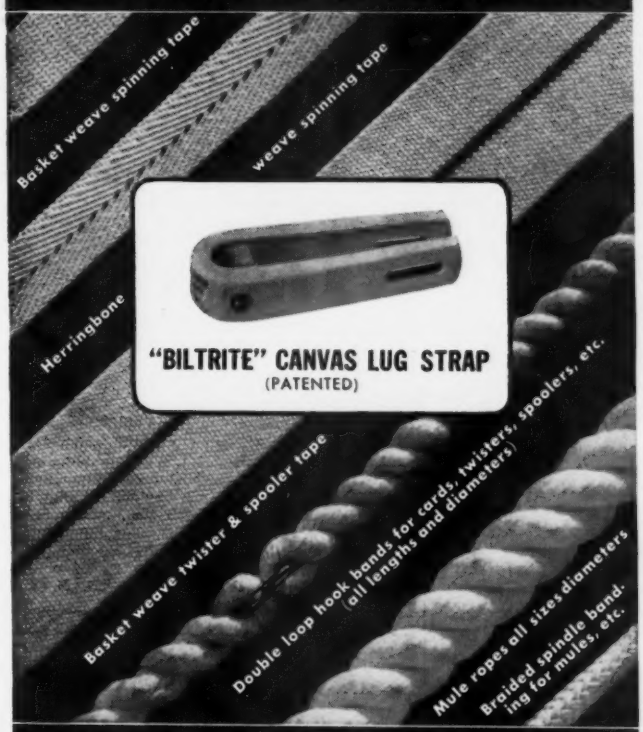
FOR SPINNING, TWISTING, SPOOLING, WEAVING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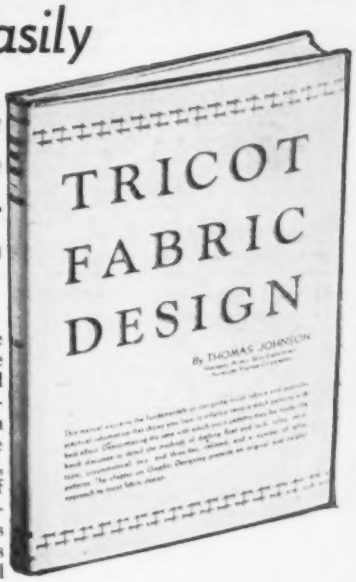

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Manager, Aveco Sales Department, American Viscose Corporation

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—stitch-making elements and their functions
—how the pattern wheels function
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—how to draft the patterns
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KNITTER MECHANIC. Wildman Spring Needle, originality executive salary to qualified man. Position vacant. P-112, Textile World, 330 W. 42nd St., New York 18, N. Y.

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WANTED—AN experienced Textile Engineer or Textile Technician as senior instructor in textile manufacturing and engineering. Write giving full particulars, personal, educational, training, practical experience and other qualifications to the Principal, Provincial Institute of Textiles, Hamilton, Ontario, Canada. State salary expected. Duties to commence about August 1, 1947. Preference given to ex-servicemen.

WANTED—AN instructor in textile manufacturing qualified and experienced in one or more of the Cotton system, the Woolen system, Knitting, Weaving. Write giving full particulars, personal, educational, training, practical experience and other qualifications to the Principal, Provincial Institute of Textiles, Hamilton, Ontario, Canada. State salary expected. Duties to commence about January 1, 1948. Preference give to ex-servicemen.

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COTTON MILL Superintendent desires position as manager of medium size, quality producing mill on cotton or synthetics. Twenty years experience from opening through weaving including overseer and superintendent. LCS graduate. Age 38, strictly sober, energetic, morally upright, ambitious and conscientious, and can manage labor successfully. Presently employed, but desire connection where red-tape and indecision doesn't retard progress. Good references. PW-114, Textile World, 330 W. 42nd St., New York 18, N. Y.

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For Southern textile mill in the Carolinas. Must have thorough knowledge bookkeeping and accounting and be fully familiar with cotton mill office routine. Knowledge of cost accounting helpful but not essential. Position requires executive ability to handle all administrative phases of company's operations. Generous compensation based on salary and bonus to qualified man.

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Textile, Mechanical or Chemical Graduate between 25 and 35 years of age for unusual position in production work. Must have at least four (4) years of production background with not less than two (two) years of experience in a supervisory capacity. Man selected will be one who has been associated with the production of fabrics.

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PW-121, Textile World,
330 West 42nd St., New York 18, N. Y.

POSITIONS WANTED

TIME STUDY Trainee. Veteran. 1946 college graduate, math, accounting, and industrial management. Recent needle industry time study, wage incentive, production planning experience. Desires position with consulting firm or reputable manufacturer. PW-115, Textile World, 330 W. 42nd St., New York 18, N. Y.

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(FOR FURTHER INFORMATION, WRITE: Classified Advertising Division, TEXTILE WORLD, 330 W. 42nd ST., New York 18, N. Y.)

24 Years of Experience

It's good business

to do business with ONE concern that has established its prestige and its reputation for integrity and fair dealing in its Service to ONE industry...

MLC

Sells operating Textile Mills in whole or in part without interrupting profitable business.

•

Buys Complete Mills or Units of Machinery of any type for any Division of the Textile Industry.

•

Sells Reliable Textile Machinery

MACHINERY LIQUIDATING COMPANY

Specialists in Selling and Purchasing Textile Machinery, Accessories and Mill Supplies

31-33 WEST 42nd STREET MLC **NEW YORK 18, N. Y., U. S. A.**

ESTABLISHED 1923 CABLE ADDRESS: "LIQUIDATE" NEW YORK

DOMESTIC TELEPHONE PEnnsylvania 6-8014 EXPORT

Serving the Textile Industry

1—Motor Driven Agitator
2—Batchers or Rolling up Machines, 63", 65"
2—#00 Sturtevant Blowers, paddle type, belt driven
2—C&M 2-cylinder Brushing Machines, 62½", and 72", belt driven
3—Button Breakers, 2—48", 1—50", brass buttons on wood rolls
2—45" Textile Finishing Machinery Co. 6-bowl Calenders, 4 cotton and 1 iron roll, screw and lever set
2—54"x60" D&F Shoddy Cards, 2 iron cylinders, each with automatic feeders
1 Lot Numerous Card Parts for Shoddy Cards, workers, strippers, doffers, fancies, etc.
1—60" P&W Doubling, Boarding and Winding machine, doubles to 30"
1—Reeves Drive, Range 3-1, Size 6, Class G
1 Set 20 H. W. Butterworth Horiz. 108"x 23" Dry Can Set, motor driven, with Reeves Drive, tined iron
1—54"x54" Batch Type Waste Duster, screen faced rotor with finger type rotor inside screen
1—5 arm Smith Drum Skein Dyeing Machine, with hydraulic lift, monel tanks, motor driven
2—26" Tolhurst Extractors, belt driven; 1 has safety cover, counter shaft
1—30" American Laundry Extractor, copper tinned basket, belt driven, under drive
1—40" Cleveland Extractor, self-balancing copper basket, top belt drive
1—40" Tolhurst Extractor, self-balancing copper basket, top pulley drive
5—60" Tolhurst Extractors, self-balacing copper basket, top pulley drive
1—45" Dobson & Barlow Feeder, feed and delivery same end
4—40", 42" E&H Flat Folding Machines with take-up stand, chain drive, no motors
1—100" C&M Flat Folder, 1 HP, GE Ind. motor, pneumatic table lift, with roll up stand
1—66" Folder Attachment
3—#7 Hunter 2-string Fulling Mills, belt driven
1—M3 Rodney Hunt 2-string Fulling Mill, belt driven
15—40", 48", 60", 80" Card and Napper Grinders
2—Peerless Belt Lacers
1—4 Shuttle Card Lacing Machine with ½ HP motor

MACHINERY FOR SALE

6—40" Draper Model X Automatic Looms, 45" reed space, lacey tops, with motors.
100—40" Draper Model K Automatic Looms with dobbies
100—42" Draper Model K Automatic Looms with dobbies
24—44" Stafford 49½" reed space dobby shuttle cange Looms, with motors
110—45½" reed space Draper Model E Looms, with lacey tops, 3 bank stop motions, worm take-up, belt driven, 1½ beams, 2000 drop wires
2—45½"C&K 4x1 Looms, 25 harness, motor driven, with silk roll take-up
1—48" C&K 4x4 Box Loom, arranged for 25 harness, belt driven, friction clutch
12—54½" C&K 4x1 Looms, 20 and 25 harness, belt driven
46—80" and 82" C&K 2x1 Automatic Looms, 8 harness cam motions, motor driven
40—80" Loom Beams
10—92" C&K 4x1 Automatic Looms, 8 harness cam motions, motor driven
1—92" C&K 4x4 Box Loom, 25 harness, motor driven
1—44" C&M Measuring Machine, 60 yd. dial, belt driven
1—64" P&W Measuring and Woolen Cloth Winder
1—66"x23" P&W 60 yd. Measuring Machine, sanded roll, belt driven
1—66"x24" P&W AWC Measuring and Folding Machine with 100 yd. counter, belt driven
1—12 Pole Smith Drum Skein Mercerizer, belt driven
75—New Leland 1-plus HP 3/60/220 V, 1200 RPM Heavy Duty Motors
27—New ½ HP 3/60/220 V Motors
20—New 1 HP 3/60/220 V Motors
4—240 spindle J&B 1⅞" gauge Mules, belt driven
2—240 spindle J&B 2" gauge Mules, 10 jackspool drums, belt driven
1—61" Woonsocket 2-cylinder Napper, 20 rolls per cylinder
2—80" D&F 20 roll Single Acting Nappers
1—80" D&F 22 roll Single Acting Napper, belt driven
1—30"x30" Mezzera Wool Opener with grid and feed apron
1—45" 2 roll Padder, rubber rolls
2—40" Kitson Breaker Pickers, motorized
3—40" Kitson Finisher Pickers, motorized
4—40" Kitson Single Process Pickers, motorized
1—42" Olsham Fearnaught Picker with feed table
2—48" Parkhurst Burr Pickers with blowers, belt driven
2—48" Sargent Burr Picker, belt driven, one with new feed apron and blower
6—52", 65½", 66" Gessner and Voelker single and double bed Rotary Cloth Presses
1—54" Werner Single Color Printing Machine with Reeves drive
10—50 spindle Lindsey-Hyde Adjustable Reels, belt driven
1—60" C&M Single Blade Plush Shear, arranged for motor drive
2—60" P&W Single Blade Shears
11—66" P&W Model B 2-blade Shears, belt driven
1—66" P&W Model A 2-blade Shear, belt driven
1—76" C&M Double Blade Shear
3—Lowell 2-cylinder Slashers
35—208 spindle Fales & Jenks 2¾" gauge, band driven Spinners, some 1⅝" ring, balance 1 11/16" ring.
4—252 spindle Whitin 2" ring, 3" gauge, tape drive, long draft Spinners
1—32½" D&F Jack Spooler
1—100 spindle Whitin Spooler with Foster Tensions, McCall Guides
6—Smith & Furbush Spoolers, 44" drums, 48 ends, 44½" long spools with 10" head, complete with spool stands
1—80' Butterworth Clip Tenter with top opening, brass faced clips, 60" opening
1—74' Butterworth Clip Tenter with top opening, brass faced clips, 76" opening
1—60" C&M Single Wire Brush Tiger, arranged for motor drive
5—80 spindle Hopedale band driven Twisters, 4½" ring, 5½" gauge, belt driven
4—8 string Hemmer wool washers
2—60" P&W Winders with stencil attachment
1—80 spindle Foster Tube Winder
1—100 spindle Foster Model 12 Tube Winder, belt driven
2—100 spindle Foster Model 12 Cone Winders
1—100 spindle Foster Model 12A Cone & Tube Winder
5—100 spindle Foster Model 21A Tube Winders
2—Sargent Yarn Conditioning Machines

MACHINERY LIQUIDATING COMPANY

Specialists in Selling and Purchasing Textile Machinery, Accessories and Mill Supplies

31-33 WEST 42nd STREET **NEW YORK 18, N. Y., U.S.A.**

ESTABLISHED 1923 CABLE ADDRESS: "LIQUIDATE" NEWYORK

DOMESTIC TELEPHONE PEnnsylvania 6-8014 EXPORT

"Get it from BAY STATE"

ANYTHING
FROM A BOBBIN TO A COMPLETE MILL
LIQUIDATIONS . . APPRAISALS

Cotton—Silk—Rayon—Wool—Finishing

PARTIAL MACHINERY LIST

11—36" Cards with Roller tops for Cotton Batting
1—Saco-Pettee 45" Card, 12" Coilers
4—Draper Twisters 3" ga. 2" rings, 200 spindles ea., 3 ply creels, band drive
2—Collins 200 spindle Trap Twisters, tape drive, 3¼" ga. (pitch 5" traverse) 2¼" rings, arranged for motor drive
2—Clark 48" Mixing Pickers with table feed (NEW)
32—C&K 54" R.S. Looms 4x1 and 2x1 shuttle change, 25 harness dobby heads motor driven 220 volts, for Rayon
40—Whitin Duck Looms 41½" R.S. 2 harness, Mech. Stop Motions, motor driven 550 volts
6—Parks & Stelle Worsted Spinning Frames, 160 spindles ea. (flyer) motor driven 220 volts
1—Foster Doubler #25 for tubes, 100 spindles, motor drive, no motor
2—Foster Winders #30 for cones and tubes, 100 spindles, motor drive, no motor
4—Universal #40 Whirlwind Winders, wind on wood cones, 100 spindles each
1—Hermas 58"—4 blade shear
1—V. V. 80" 2 roll Quetch
1—V. V. 65" 2 roll Quetch

1—STARCH FINISHING RANGE

1—2 roll Starch Padder, top roll rubber, bottom roll brass, 45" face x 10" dia. screw and lever set, belt drive
2—cast Steel Size Kettles, outside dia. 35" x 41" complete with agitators, belt drive
1—set 25 Horizontal Copper Dry Cans ,23" dia. x 42" face including frames, gears, bearings, etc.
1—Ceiling Cloth Folder, 42", belt drive
1—2 roll Friction Calender, 2 chilled iron rolls, top roll 10" dia. and heated, bottom 19" dia., middle roll combination husk 18" dia. x 42" face, screw and lever set, slip belt batcher, friction clutch pulley, belt drive.
1—Elliott & Hall Cloth Folder 42" belt drive.

SPECIAL OFFERING

COTTON UNIT
Complete 5,000 spindles
8,000 lbs. weekly

WOOL SPINNING UNIT
Complete operating unit
70,000 lbs. weekly

NEW FINISHING MACHINERY

Agers—Vat & Acid
Slack Washers
Screen Printing Tables
Open Soapers
Cottage Steamers
Dye Jigs

Your Specific Inquiries Are Invited

DIRECT FACTORY AGENTS

Somerset Engineering Company **Walter L. Parker Bobbin & Spool Co.**

Phone Fall River 7-9031

BTS

BAY STATE TEXTILE CO.

220 HARTWELL STREET • FALL RIVER, MASS.

"Consolidated"

HEADQUARTERS FOR

USED EQUIPMENT FOR THE TEXTILE INDUSTRIES

RAYON
COTTON • SILK
WOOL

BLEACHING
DYEING
FINISHING
PRINTING
WEAVING

33-41 BERGEN ST., PATERSON 2, N. J. TEL. ARmory 4-6540

COME TO PATERSON when you want the most prompt and satisfactory service, either in BUYING Textile Equipment or in SELLING your Idle Equipment. Here in Paterson we have greatly augmented our staff, enlarged our office, warehouse and reconditioning shop floor space and thus have even greater facilities than ever before to serve you. This growth of "CONSOLIDATED" is the logical result of the ever-increasing demands being made on us constantly by the Textile Industries. On the next two pages we show you pictures of our Paterson branch and a partial listing of the used equipment which we have now available. We repeat — Come to "CONSOLIDATED" in Paterson to get the textile machinery and equipment for the increased production America wants to help America keep prices down.

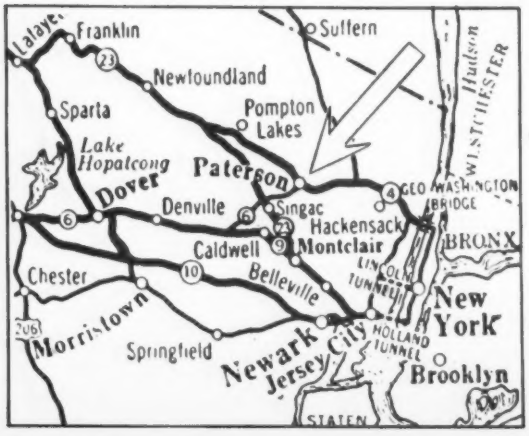
• *See inside for interior views of warehouse and offices* ➡

WE BUY— *Do not delay. Send us your list* **TODAY**

WE SELL— *Supply your needs from next two pages...*

OFFICES
WAREHOUSE
AND
RECONDITIONING SHOP
"Consolidated"
TEXTILE
DIVISION
PATERSON 2, N. J.
33-41 BERGEN ST.

• HOW TO REACH "Consolidated" PATERSON SHOPS FROM NEW YORK CITY



BY CAR: Express Highway to George Washington Bridge. Take Route 4 to center of Paterson.

BY BUS: 43 Street near 7th Ave., bus terminal. Take bus to Paterson.

BY FERRY AND RAILROAD: Erie Ferry to Jersey City; then take Erie train to Paterson.

"Consolidated" WANTS YOUR IDLE EQUIPMENT

TO INCREASE PRODUCTION
AND KEEP DOWN PRICES

We have constantly increasing calls for all kinds and types of Textile Machinery and Equipment · Convert your Idle Equipment into capital without delay . . .

SEND "CONSOLIDATED" YOUR LIST—TODAY!

"Consolidated"

1947 BEST BUYS IN USED MACHINERY

R. B. & F. Six Color print machine, 42". Complete with dryer, copper rollers, Mandrels, Motors & drives.

EXTRACTORS

4—K & G & Burkhardt 60" Extractors, rubber baskets.
1—Hercules 48" Extractor, copper basket.
3—26" & 30" Hercules Extractors.
1—V.V. 42" self balancing Extractor with motor.
3—Holhurst 48" & 36" Open Top Extractors.
1—Gessner 78" Vacuum Extractor.

DYEING MACHINES

3—K. & W. Obermaier & Buhlman skein dyers.
1—Obermaier Package Dyer, complete with pump, etc.
3—Bleaching Kiers.
1—Smith-Drum 22-arm skein dyeing machine.
2—Smith-Drum 100# & 50# Rotary Dyeing machines.
1—Butterworth stainless steel dye kettle.

DRYERS

1—National Loop Dryer, 6 fans, 86" wide.
1—Heathcote Pine Tenter Dryer.
2—3-Apron Conveyor Dryers.
2—P & S Raw Stock Dryer.
1—Van Vlaanderen Net Dryer.
1—P & S Multi-pass Conveyor Dryer.
1—P & S 2-section skein dryer.
1—P & S 500# Skein Dryer.

NAPPERS

2—D & F Single Acting Nappers, 60" & 84".
2—Woonsocket 86" 20-roll S.A.B.B. Nappers.
1—Woonsocket 86" 24-roll D.A.B.B. Nappers.

TENTER FRAME

1—Butterworth 90' Tenter Frame, 50".
1—Van Vlaanderen 30' Tenter, 80" wide.
1—Pin Tenter Frame, 72", complete with motor drive.

PALMERS-PALMER QUETCH UNITS

1—Textile 66" Low type Palmer.
1—V.V. 88" Palmer Quetch Unit.
1—General Machine Co. Palmerette.

COATING MACHINES

1—Butterworth coating machine with drying cylinders.
1—Textile 60" Coating Unit with geared pump.
2—Knife Coating machines, 64".

BEAMERS-BATCHERS—TUBERS

5—Textile 50", 60", 66" & 72".
4—2-roll B.B. Batchers, 50"-72".
4—Tubing & Measuring Machines—50"-72".

PREPARATORY MACHINES

1—Davis & Furber 48" Mixing Picker.
1—Wool Opener & Duster.
1—Terrill Bobbin Stripper.
1—Whitin automatic Cleaner.
2—Smith & Furbush Shredders.
1—Schofield 42" Rag Picker.

WASHERS

1—Rodney Hunt Rope Washer.
1—Rag Washer.
1—Rodney-Hunt Slack Washer.
1—American 2-comp. Cascade type Washer.
1—Riggs & Lombard Wool Washer.
1—James Hunter Cloth Washer.

CALENDERS

1—Grand Rapids Calender, 46½".
1—Butt, 3-roll 55" Calender.
1—C. & M. 2-roll 60" Calender.
1—Knit Goods Calender.
1—Butterworth 4-roll Calender.
1—5-roll 90" Calender.
1—4-roll 54" Friction Calender.

Complete Weaving Plant for Drapery Fabric.
1—Morrison 60" Palmer Quetch.
Complete Carpet Plant

SHEARS

3— P & W 2 Blade Shears 66½".
1—P & W Single Blade Shear 60".
1—Plush Shear.
2—75" Shears for cutting blankets.
1—P & W 80" 14-blade Shear.

DYE BECKS—DYE JIGGS

3—V. V. 4' stainless steel lined dye becks, complete with motors and drives. New all S.S. Dye Becks, 4'20" long.
4—60" S.S. Dye Jiggs.
1—Benninger 66" Dye Jigg.

1—Nash L-4 Pump with 20 HP. Motor.

Complete Skein dyeing plant for Worsted Yarns.

KNITTING MACHINES

20—Brinton Ribbers, 36 cyl. 48 dial.
2—New Brinton Knitters, 24" 64 Feed.
2—Supreme Jersey Circular Knitters.
10—Chenille machines.

WEAVING MACHINES

40—C & K 50" King Cotton Looms.
25—C & K 110" & 100" Blanket looms, M.D.
6—C & K 76" Worsted Looms.
8—C & K 4 x 1 Looms, 72" R.S. 2600-hook jacquard heads.
10—Draper "D" 72" Automatic Looms.
1—C & K 18' Ribbon Loom and Winder.

GARNETTS

4—P & S & Hunter 4-cylinder Garnetts.
1—Hunter 2-cylinder Garnett.

PRINT MACHINES

2—Van Vlaanderen Ribbon Printing Machines.
1—Waldron 4-color Printer.
1—R. B. & F. Single color Print Machine, 48".
1—Werner 54" Print Machine.

CARDING MACHINES

14—H & B & Lowell 40" Cards with 12" coils.
2—4-cylinder Woolen Cards, 48" x 48".
3—3-cylinder Woolen Cards, 48" x 48".

SPINNING & WINDING MACHINES

1—Davis & Furber Compressor Spooler.
12—#90 Universal Winders, for silk operations.
1—Sipp 80 spindle Winder.
25—Sipp-Eastwood Winders, m.d.
3—Atwood 5-B Spinners.

BUTTON BREAKERS

2—V.V. 60" & 50" Button Breakers.

TWISTERS

5—Brownell Twisters, 48 to 96 spindles.
1—D & F 60 spindle Twister, 3¾" gau.
3—Atwood Double Deck Upstroke Twisters.
4—Atwood 5-B Spinners.

MISCELLANEOUS

5—Chinchilla machines.
1—Sample Dye Vat.
1—72" Flopper.
1—Havet Patch Ager.

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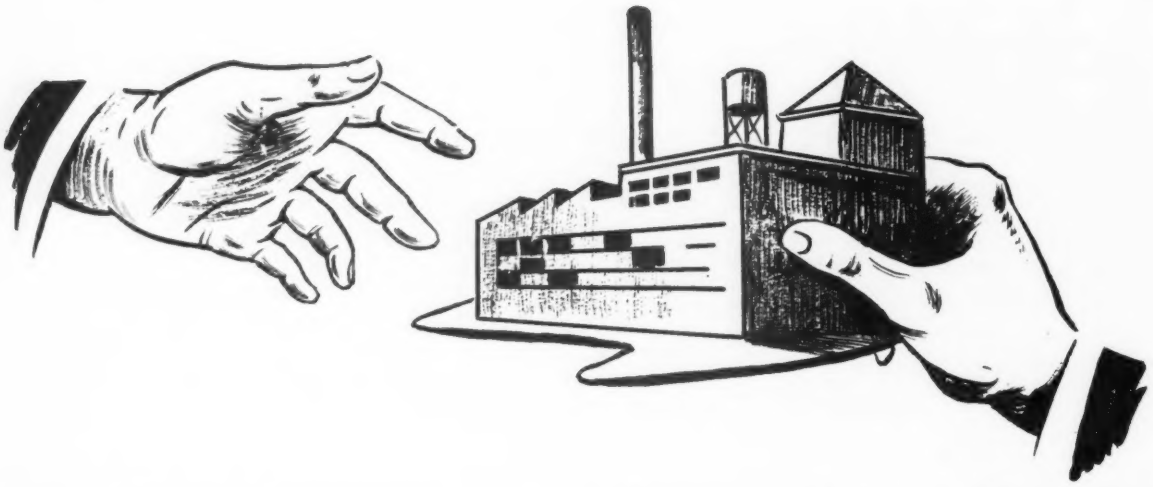
THE MILL CHANGED HANDS.....



but business continued as "usual"

When a complete mill, or any part of the stock in a company changes hands, not the least important part of the transaction is the preservation of good will and the continuance of the business along well established and profitable lines. To mill executives Republic Textile Service offers a confidential and experienced service that arranges such transference satisfactorily and with the least possible delay. Repeatedly both principals and their attorneys in these matters have written us congratulating us on the manner in which we have been able to handle their affairs. On this basis, we would appreciate it if you would contact us, or have your attorney or your banker investigate us, with the complete assurance that any inquiries or negotiations will be held in strictest confidence. We are also in a position to render comprehensive reports on the appraisal of textile mills or equipment that you may be thinking of purchasing.

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MILL PROPERTIES

Republic MEANS QUALITY IN TEXTILE EQUIPMENT—

WOOLEN EQUIPMENT AVAILABLE

FINISHING EQUIPMENT

1—Winsor & Jerauld Tenter Frame, 40'.

1—Set horizontal Dry Cans, 23 Copper Cans to set, 105" wide.

1—Set Vertical Dry Cans, 40 Copper Cans to set, 105" wide.

1—Butterworth 50" Dye Jigg, Stainless Steel, with motor.

1—Van Vlaanderen 54" Quetsch, 2 roll, Ball Bearing, Rubber Rolls, with motor.

1—Hennekin Tuber, 50", 1 rubber covered roll, ½ HP Motor.

1—Elliot & Hall 52" Flat Folder.

4—Dye Jiggs, 54".

1—Textile 2 roll Padding Machine, 45" width, topp roll rubber, bottom roll brass.

1—Set James Hunter Squeeze Rolls, 17" width, top roll rubber, bottom roll brass.

4—Saturating Tanks, James Hunter Machinery Co. rubber lined, 60" deep, 52" long, 42" wide, equipped with rubber covered bottom rolls.

1—National Loop Dryer, 32' long, 13' high, 86" wide, Motor and variable speed drive.

1—60" Van Vlaanderen Tuber

2—50" Van Vlaanderen Tubers.

PICKING

1—Parkhurst 42" Burr Picker

1—D&F 48" Fearnaught Mixing Picker

1—Oil Mixing Tank

WOOLEN CARDING

3—Sets D&F Cards, first and second breakers 48" x 48", finisher 36" x 48".

3—Sets D&F Cards, 60" x 48", Bramwell Feeds, 5-29" Spools, 90 ends.

1—Set D&F Cards, 60" x 48", 5-29" Spools.

3—Sets D&F Cards, 48" x 48", 4-29" Spools

1—Set D&F Cards, 60" x 60".

2—Sets D&F Cards 48" x 42"

1—B.S. Roy 70" Floor Grinder.

WOOL SPINNING

6—Asa Lees Mules, 360 sprindles

2— " " " 342 "

4— " " " 306 "

6—Davis & Furber Mules, 306 spindles

All are 1-3/4" guage, 18 end spools, 8" Bobbins

Total—18 Woolen Mules 5,904 spindles

WOOLEN SPOOLING

5—Warp Compressing Machine Company 30" Jack Spoolers

1—Davis & Furber 30" Jack Spooler, 40 ends.

DRESSING

3—Davis & Furber Woolen Dressing Frames, fully equipped.

SPECIAL OFFERING OF LOOMS

90—C&K S-3 Looms, 45" width, individually motor driven.

24—Draper Automatic Bobbin Changing Looms, Modified Model D, 20 harness 69½" Reed Space, Rebuilt in 1937.

ENGRAVING EQUIPMENT

7—John Hope 50" Pantograph Machines.

10—John Hope 48" Pantograph Machines

1—John Hope 45" Pantograph Machine

PRINTING MACHINES

7—Rice, Barton & Fales Printing Machines:

1—8 Color, 64"
3—8 Color, 48"
1—5 Color, 54"
1—4 Color, 48"
1—3 Color, 45"

MIXING KETTLE

1—Set Textile Finishing Co. Mixing Kettles, five kettles to set, 100 to 200 gallon capacity with double agitators.

OPEN SOAPER

1—Textile Machinery Co. 3 Roll, 4 Compartment Open Soaper, rubber and brass squeeze rolls.

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Looms, Knitting Machines, Spinning Equipment, Pebble Mills, Kettles, etc.

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PARTIAL LIST

DYEING & FINISHING

1—Batcher 2 roll 50", scrimp bar & brass carrying roll.

1—Brush 2 roll 54", blower piping attachments.

1—Buckley Beater Blade Cylinder 44½" B.B. on shaft.

1—Calender Rolling Head 48", heated roll.

2—Calenders 25" Face, Husk roll top, iron roll bottom.

1—Calender 60" Face 4 roll unit, pump, mtr driven.

2—Calenders 80" Face 6 roll units.

1—Coating Machine 48", mandrel & doctor blade, etc.

1—Can Dryer 6 copper cans 72"x36" dia.

1—Can Dryer 12 tinned steel cans 140" x 23" dia.

1—Full Decatur 72" x 24" pumps, roll- & unrolling, etc.

2—Net Dryers 74" and 90" width units.

1—Loop Dryer 84' width, vertical fans, mtr driven.

Full Fashioned Hosiery Mill: **15-Hilscher 42 Gauge 20 section leggers, with picot, taper heel and 3 carriers. 4-Sotco Loopers 28 point. Knitters cabinets, topping stands, Union Special seamers, inspection boards and rotary dyeing machines.**

1—Pin Dryer 72" width, motor driven fans.

2—Raw Stock Dryers 350 to 400 lb. units.

2—Package Dyeing Machines, 500 lb. units.

3—Skein Dyeing Machines, 28 & 56 stick units.

5—Extractors 40" to 48" Belt driven units.

1—Vacuum Extractor 78", pump, motors, etc.

2—Folders 40" and 45" widths.

1—Folder 50" Bag Type with electric knife.

1—Grinder Napper 80".

12—Humidifiers, Bahnson Model G motor driven.

1—Inspection Table with C&M 100 yd. measuring clock, 90" wide.

4—Jiggs 50", stainless steel, motor driven.

6—Kiers circulating covers 1272 to 3392 gal. capacity.

2—Mangles 40" 80" units 2 roll machines.

3—Mangles 80" units 3 roll machines.

3—Nappers 80" & 100" wide Single Acting.

4—Nappers 72" to 90" wide 20 and 36 roll units.

2—Nappers Knit-Goods 72" & 80" wide 20 roll units.

1—Palmer 64" Face x 61" dia. cylinder, new blanket, mtr driven.

1—Rotary Steam Press 80" wide, double bed unit.

2—Sewing Machines Rotary Foot Power.

1—Singer 70" 4 burner unit.

1—Shear — Brushing Machine 44" with 4 sets of brushes & Cutting parts.

1—Shear Picking 45" with 3 sets of Cutting Parts.

6—Shears 45" to 80" Single & Double Blade Units.

1—Shear Carpet 12/4 Single Blade.

1—Slitter 42", 87 knives used to slit 22 oz. craft tissue.

2—Tenter Frames 80' long x 50" width.

2—Tubers 60" motor driven, one with inspection board.

1—Raw Stock Scouring Unit 2 bowl 36" width with automatic hopper feed and Raw Stock Dryer to handle capacity of same.

1—Raw Stock Scouring Unit 3 bowl 36" width with automatic hopper feed.

WOOLEN Plant: **11—D & F 3 cylinder CARDS, wood faced cylinders, feeders, rubb conders, clothed. Seven (7) D & F Spinning Mules, totaling 2060 spindles 2" to 2 7-16" gauge. All machinery now operating.**

CARDING, SPINNING & WEAVING

8—Combers Cotton, 8 heads, 12" coilers.

2—Condensers Rubb for 60" Card with 12" ring doffers.

1—Condenser Tape for 60" Card 2 bank unit.

1—Card Single Cylinder 45" x 48" with hopper feed & rubb condenser.

NEW—USED—REBUILT McDOWELL TEXTILE MACHINERY 2568 PARK AVENUE

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for worthwhile and low-priced
TEXTILE MACHINERY

2—2 Cards 48" x 48" wood faced cylinders, 4 cylinders per set, rubb condensers, hopper feeders, clothed, etc.

1—Cleaner with Buckley Blade Beater spirawhirl type.

4—Vacuum Cleaners Mill type, motor driven.

1—Redoubler 80 Spindles using spool 6" x 4".

34—Deliveries Drawing 10" and 12" coilers.

1—Duster with B.B. Lumper 48".

1—Feed 54" automatic hopper for Card.

1—Feed 40" automatic hopper with comb for Picker.

2—Garnetts 60" and 48" units 3 cylinder machines.

2—Jackspoolers 48" for 60 ends pick clocks and compressor rolls.

4—Lappers 20 end sliver feed 10½" lap.

13—Narrow Fabric Looms 6 space to 54 space, 32 hook dobby.

200—Draper E Looms 40" Belt driven.

90—Draper E Looms 28" Belt driven.

90—Draper E Looms 28" Belt driven.

380—Draper K Looms 40" Motor driven.

3—Draper D Looms 40" Motor driven.

WORSTED SPINNING UNIT: 2 Sets of DRAWING, 3048 Spindles Tap Drive Spinning, 946 Spindles TWISTERS, 8 SKEIN REELERS, supplies on hand, etc.

WOOLEN CARDS ALL IRON: D & F 3 cylinder 48 x 48 with hopper feeders, intermediate feeds, full complement, worker, strippers, etc., rubb condensers, clothed, etc. Reconditioned in 1946.

48—Draper D Looms 70" Belt driven.

13—C&K Looms 44½" 4x1 automatic mtr driven, 6 harness.

70—Draper XK Looms 48" motor driven, 20 harness.

32—C&K Looms 50" 2x1 and 4x1 box, motor driven, 25 harness.

190—C&K Looms 58" 4x1 box, mtr driven, 25 harness.

12—CK Looms 82" 4x1 automatic mtr driven, 25 harness.

11—C&K Looms 76" 4x4 box, belt driven, 24 harness.

11—C&K Looms 92" 4x1 automatic, 12 harness, arranged motor drive (no motors)

5—Mules 2—240 spindles each 2-⅛" Gauge, 1-300 Spindles, 2" gauge, 1-340 Spindles 2" Gauge, 1-280 spindles 2" Gauge.

2—Mules 480 Spindles each, approx.: 2" Gauge.

1—Oiler for 48" Picker, tank, blower and pump, etc.

1—Picker Burr 48" with automatic hopper feeder, extra set Burr rolls

2—Pickers, Rag 20" x 30' Dia cylinders, B.B. apron feeds.

4—Slubbers 11 x 5½, 56 and 64 spindle units.

8—Speeders, 8x3½, 160 spindles each.

30—Speeders 7x3½, 160, 168 and 176 Spindle units.

30—Spining Frames 208 Spindles each, 2-¾" Gauge, 1-13/16" ring.

36—Spinning Frames, 224 Spindles each, 2-¾" Gauge, 1-¾" ring.

1—Twister, 200 Spindles 3-¼" Gauge, tape driven.

7—Twisters 156 Spindles each 5" Gauge, tape driven.

1—Twister 132 Spindles 5-½" Gauge, tape driven.

1—Warper, New High Speed 54-¼" with Magazine Creel 1200 ends.

6—Warpers 85" wide on wood x 95" dia., Magazine Creels, 1624 working ends.

1—Warpper Pin Type for 78" Loom Beam with beamer, track, etc.

50—Winders 100 Spindle units swift to spool.

2—Winders 20 Spindles each making Cop 12" x 1-½" Dia.

2—Winders Model #60 GF, 38 and 96 spindle machines.

2—Winders Foster #25 for Single end for double 2 ends with space to double up to 5 ends, 80 spindles per machine.

4—Winders Abbott, 80 Spindle machines equipped for Cones.

1—Winder Foster #35 for Cones 8" traverse.

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OPENING AND PICKING

3—Howard & Bullough Bale Breakers with 6-foot blending aprons
1—Whitin Bale Breaker with 6-foot blending apron
1—Woonsocket Bale Breaker, double hopper
10—Vertical Openers, Whitin, Saco-Lowell, H & B, Woonsocket
3—Whitin Upstroke Cleaners, ball bearing, 1927 model
1—Kitson 40" Downstroke Cleaner, ball bearing, "A" frame drive
3—Lummus 3-Gate Gyrators
1—Kitson 3-gate 24" Conveyor, Serial No. 409
2—Whitin 41" Tandem Automatic Feeders, 1927 Model
10—Howard & Bullough Automatic Hopper Feeders
4—Kitson Automatic Hopper Feeders
20—Harwood 40" Automatic Hopper Feeders
3—Whitin 40" Automatic Hopper Feeders
1—Kitson 38½" Feeder, with apron
1—Whitin 56" Picker Feed
1—Greenhalgh 52" Willow, 42" cylinder
1—Whitin Single Process Picker
2—H & B 40" Finisher Pickers, 2-blade beaters, extended aprons

CARDS AND COMBERS

5—Platt Brothers 43" Full Roller Top Waste Cards, newly reclothed
6—Nasmith Hetherington Combers, 10" coilers
24—Whitin Model D-2 Combers, 12" coilers
10—Whitin Ribbon Lap Machines
10—Whiting Sliver Lap Machines

DRAWING

21—Deliveries Whitin Model H Drawing, 4—Frames of 5 deliveries, 15/16" bottom steel rolls, 1 Frame of 4 deliveries, metallic top rolls, 1-¼" front bottom rolls
24—Deliveries Woonsocket Drawing, 4 deliveries per frame, 10" coilers, 1-⅜" bottom front rolls
16—Deliveries Woonsocket Drawing, 4 deliveries per frame, metallic rolls, 12" coilers
40—Deliveries Saco-Pettee Drawing, 4 deliveries per frame, 12" coilers, 1-¼" bottom front rolls
120—Deliveries Saco-Lowell Drawing, 6 deliveries per frame, 12" coilers, 1-⅜" bottom front rolls
136—Deliveries Lowell Drawing, 5 and 6 deliveries per frame, 10" and 12" coilers, 1-⅜" bottom front rolls
120—Deliveries Saco-Lowell Drawing, 4 deliveries per frame, 12" coilers, metallic top rolls, 1-⅜" bottom front rolls, spiral gears, full can targets, new trumpets, hank clocks, 1923 Model.

ROVING

3—Whitin 12x6 Slubbers, 72 spindles each, 10" gauge, 1920 Model
3—Woonsocket 12x6 Slubbers, 1—48 spindles, 2—84 spindles
2—H & B 12x6 Slubbers, 64 spindles, shell front rolls
16—Lowell 11x5½ Slubbers, 60 spindles, 9-½" gauge
4—Woonsocket 11x5½ Slubbers, 60 spindles, 9" gauge
2—Whitin 11x5½ Slubbers, 80 spindles, 9" gauge
2—Woonsocket 9x4½ Slubbers, 144 spindles, shell front rolls
1—Whitin 9x4½ Slubber, 108 spindles
4—Providence 10x5 Intermediates, 84 spindles, with H & B 4-roll scroll type long draft
4—H & B 9x4½ Intermediates, 112 spindles, shell front rolls, 1927 Model
4—Lowell 9x4½ Intermediates, 92 spindles
16—Woonsocket 8x4 Speeders, 136 spindles, 6" gauge
11—Saco-Lowell 8x4 Speeders, 136 spindles, 6" gauge
25—Whitin 7x3½ Speeders, 156 spindles, 5-¼" gauge
13—Saco-Lowell 7x3½ Speeders, 144 spindles 5-¼" gauge
38—Saco-Pettee 6x3 Jack Frames, 200 spindles, 4-⅛" gauge

SPINNING

12—Whitin tape drive Spinning Frames, 256 spindles, 3" gauge, 8—1-5/16" ring, 4—1-⅜" ring
26—Whitin band drive Spinning Frames, 252 spindles, 3" gauge, 1-3/16" ring
75—H & B band drive Spinning Frames, 10—176 spindles, 30—192 spindles, 35—256 spindles, 2-½" gauge, 1-5/16" ring

TWISTING

26—Saco-Lowell Tape Drive Twisters, 132 Spindles, 7" Gauge, 5-½" Ring, Motor Driven, 1944 Model.
8—Saco-Lowell Tape Drive Twisters, 120 Spindles, 5-½" Gauge, 4-½" Ring, Motor Driven, 1920 Model.
27—Collins Brothers Tape Drive Twisters, 152 Spindles, 4-½" Gauge, 3-½" Ring, Motor Driven, 1921 Model.
1—Brownell Fly Twister, 96 Spindles.
3—Saco-Lowell Jack Twisters, 3" Gauge, 1-⅝" Ring, Tape Drive Using 50" Jack Spools, 18 Ends Per Spool, Motor Driven, 1924-28 Models.
3—Whitin Twisters, 256 Spindles, 3" Gauge, 1-¾" Vertical Rings, Belt Driven.

WINDING, WARPING AND SPOOLING

38—#90 Universal Winders, equipped for Rayon with Disc Quill Tensions.
8—Foster #12 Cone Winders, Semi-Hi Speed, 100 Spindles each.
3—Foster #25 Doublers, Multiple Wind, Motor Driven.
2—Foster #30 Cone Winders, 100 Spindles each, Motor Driven by 5 HP, 550 volt motors.
1—Universal #40 Wood Cone Winder, 70 Spindles, Double Motor 550 volt, 1932 Model, with Wood Cones.
3—Barber-Colman High Speed Warpers with Creels.
3—Entwistle 54" High Speed Warpers with Creels for Wood Cones.
3—Whitin Tape Drive Spoolers, 5-½" Gauge, 80 Spindles each, 1927 Model.
25—Saco-Lowell Tape Drive Spoolers, 5" Gauge, 100 Spindles, 1920 and 1925 Model.

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TYING-IN AND DRAWING-IN

2—Barber-Colman Warp Drawing-In Machines, Style 2-YY
2—Barber-Colman Warp Drawing-In Machines, Style 2-SSD
1—Barber-Colman Drawing-In Machine, Style 3-SS

LOOMS

324—Draper Model "K" Rayon Looms, 45-½" Reed Space, Stafford Thread Cutters, with or without Dobbies, Motor or Belt Driven.
60—Draper Model "E" Looms, 45-½" Reed Space, Stafford Thread Cutters, Operating from C&K 600 Hook Jacquard Heads.
140—40" Draper Model "E" Rayon Looms, 45-½" Reed Space, with or without Dobbies, Stafford Thread Cutters, Motor or Belt Driven.
24—Draper Model "P" Looms, 49" Reed Space, Roper Let-Off, Belt Driven.
86—Draper Modified "D" Looms, 40" Reed Space, 42 with Dobbies, 44 Cam Looms with Dwight Tops, Belt Driven.
62—50" Draper Model "D", 55" Reed Space, 20 & 25 Harness Dobbies, Stafford Thread Cutters, High Roll Take-up, 1 HP, 550 volt Motors.
10—Draper Modified "D" Looms, 65" Reed Space, Roller and Dwight Tops, Belt Driven.
170—66" Draper Model "D" Looms, 71" Reed Space with C&K Intermediate Worsted Heads, Stafford Thread Cutters, Motor Driven by ¾ HP, 550 volt Motors.
8—C&K 48" 4x4 Box Looms, with Gem Intermediate Heads, Motor Driven
100—C&K 52-½" Reed Space, 4x1 Box, 20 Harness Double Index Dobbies.
48—C&K 64" 4x1 Box Looms, 25 Harness Dobbies, Belt Driven
33—Stafford 72" Automatic Shuttle Change Looms for Heavy Draperies or Upholstery Fabrics, Motor Driven
40—Stafford Automatic Looms, 68" Reed Space, Roller Top.
38—Stafford 100" Reed Space, Automatic Shuttle Change, Motor Driven.

FINISHING

216—Copper Dry Cans, 23" Diameter by 50" Face, Vertical Frames, Removable Journals, Siphons and Buckets.
1—39-Can Butterworth Dryer, equipped with new 16 gauge Stainless Steel Cans 23" diameter x 130" face, with self-aligning roller bearings, siphons, individual trans, Johnson joints and strainers, vertical frames, 1942 Model.
1—Set 36 Copper Horizontal Dry Cans, 30" Diameter x 86" Face.
1—Set 22 Cans, Tinned Copper, 23" Diameter x 66" Face, Horizontal Frames.
1—50" 34 Can Dryer, Copper Cans, 23" Diameter x 50" Face, Horizontal Frames.
1—72" Textile 40 Can Dryer, Copper Cans, 23" Diameter x 72" Face, Horizontal Frames.
1—86" 37 Can Dryers, Copper Cans, 30" Diameter x 86" Face, Horizontal Frames.
1—90" 11 Can Dryer, Copper Cans, 60" Diameter x 90" Face, Horizontal Frames.
1—99" 23 Can Dryer, Copper Cans, 23" Diameter x 99" Face, Horizontal Frames.
1—Butterworth 5 Bowl Calender, 44-½".
1—Butterworth ¼ Ton Experimental Laboratory Type Steel Kier, complete with Pump, Motor Driven
2—50" General Machine Company Stainless Steel Dye Jigs, totally enclosed Gearing.
2—46" Cloth Agers, 24' long.
1—72" Cloth Ager, 12' long, used for vat dyeing.
1—72" Cloth Ager, 12' long.
1—72" Shallow Open Soaper, or Washer, 8 Compartments, with 8 2-roll Nip Units.
1—43" 2-roll Mangle, S & L set, 1 rubber covered roll, 1 copper roll, belt driven.
1—46" 2-roll Mangle, S & L set, 2 rubber rolls, friction clutch, pulley driven.
1—Lincoln 50" x 40' Straightaway Tenter Frame, brass face clips, top opening type.
1—58" 6-burner open flame type Singer, with totally enclosed quench box.
2—Mill Engraving Machines, power driven.
1—66" Parks & Woolsen Kaumograph Machine, equipped with 3- transfer heads, motor driven.

MISCELLANEOUS

1—Sargent Raw Stock Wool Dryer, Model M, 97" Wide, 24' Long, Wire Screen Mesh Apron, equipped with 4 Fans, Belt Driven.
1—Whitin Model "A" 3-Cylinder Hard Waste Machine, 1927 Model.
1—Hunter Hydraulic Baling Press, used for skein baling.
2—48" Tolhurst Extractors, Copper Basket, Overhead Belt Drive.
1—75" David Gessner Horizontal Extractor.
3—Davis & Furber Dressing Reels, 82" wide, equipped with creels and dressing frames.
2—Curtis & Marble 42" Shearing Machines.
1—Hermas 4-Blade Shear, 1936 Model with Curtis & Marble Brusher, for 48" Cloth, Motor Driven.
1—Curtis & Marble Brusher, 44", equipped with Rolling Up Head.
1—Termaco #207 Roving Bobbin Cleaner will take up to 12" Bobbin, Belt Driven.
1—Saco-Lowell Card Stripper connected to Sturtevant #7 Blower, Motor Driven.
2—Davis & Furber Mules, 2.08 Gauge, one 350 Spindles, one 355 Spindles, accelerated spindles, 1916 model.
8—Davis & Furber Mules, 2" Gauge, one 264 Spindles, three 288 Spindles, four 312 spindles, accelerated spindles, Belt Driven.
3—66" Parks & Woolson 3-Blade Shears.
1—66" David Gessner Steam Cloth Press, Double Bed, Model 1933.
1—53" Curtis & Marble Cloth Yardage Folder, 1 yard fold, foot lift, belt driven.
1—66" Curtis & Marble Cloth Yardage Folder, 1 yard fold, foot lift, belt driven.
3,000,000 12" Rayon Heddles, ¼" eye.
10,000 Heddle Frames 44" Wide.
23 American Moistening Company Duplex Humidifiers, Motor Driven.

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MEN'S HOSE MACHINES

LOT	QUANTITY	
12413	5	3½" 200 N 54 Ga. BANNERS with stripers
13530	2	3¾" 106 N 18 Ga. BANNERS with stripers, Rubber Att.
13532	10	3¾" 200 N 48 Ga. BANNERS with Rubber Att. some with stripers.
13412A	15	3½" 200 N 48 Ga. S&W Model B5 Machines with stripers.
14178	14	3½" 200 N 48 Ga. S&W Model B5 stripers, rubber tops.
13511	16	3½" 180 N Acme Wraps with Shog Att.
14055	15	3½" 160 N S&W B5 25 step Spirals with rubber tops, stripers.
14056	12	3½" 160 N S&W B5 13 step spirals (as above)

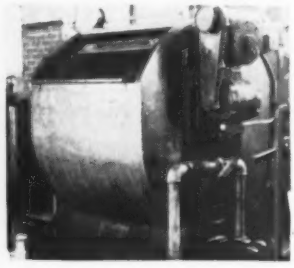
S & W Spiral Model K

LADIES' HOSE MACHINES

LOT	QUANTITY	
12678	10	3½" 300 N 70 Ga. S&W Model K Cradle Sole, French Heel, Picot, etc.
12166	3	3½" 340 N 70 Ga. S&W Model K Cradle Sole, French Heel, Picot, etc.
12770	1	3¼" 300 N S&W Model K 13 step spirals usual Att.
12676	15	3½" 300 N 70 Ga. S&W Model K 25 step spirals, usual Att.
14183	23	3¾" 260 N S&W Model K with cradle sole, French Heel, Picot, etc.
14235	25	3¾" 400 N 75/80 Ga. S&W Model K cradle sole, French Heel, Picot, Rebuilt Machines.

CHILDREN'S HOSE MACHINES

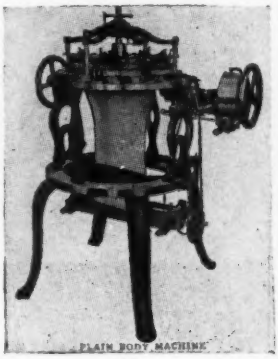
LOT	QUANTITY	
13519	5	2" 100 N 48 Ga. BANNERS Plain
12960	15	2¼" 116 N BANNERS High Cylinder Machines with Rubber Lay-in Att. and stripers.
13567	3	2¼" 120 N 48 Ga BANNERS with Stripers and Rubber Tops.
13568	3	2¼" 130 N 48 Ga. BANNERS with Stripers and Rubber Tops
13533	1	2¼" 200 N 70 Ga. BAINNERS Plain



Dyeing Equipment

DYEING AND FINISHING MACHINES

LOT	QUANTITY	
13649	1	25 lb. Smith Drum 4 Pocket Model 12 RD New, Motor Driven Rotary Dye Machine
12779	1	50 lb. Smith Drum 3 Pocket Model 11 RD, Motor Driven, Rotary Dye Machine
12771	1	50 lb. Smith Drum 4 Pocket, Model 12 RD Motor Driven Dye Machine
12958	1	100 lb. American Laundry 3 Pocket Belt Driven 42x36 Cyl. #9268991 Rotary Dye Machine
12902	1	50 lb. Strickland, Belt Driven, Paddle Dye Machine



UNDERWEAR & OUTERWEAR KNITTING MACHINES

LOT	QUANTITY	
14037	2	Brintons 20" 20 cut 48 feed 1248 needles Motor Driven, new electric stop motion
13570	1	24" 20 cut Brinton Jersey Machines 64 feed with Wesco Stop Motions, New
13569	2	20" 20 cut Supreme Type MJ 64 Feed Jersey Knitting Machines with Crawford Electric Stop Motion.
13613	2	24" Brintons 32 feed 16 cut
13614	3	24" Brintons 24 feed 16 cut
13701	1	15" S&W ribber, 8 feed 10x10 cut Motor Driven, new electric stop motion
13633	3	11" S&W ribbers, 8 feed 10x10 cut
13634	3	12" S&W ribbers, 8 feed 10x10 cut

FULL FASHION HOSIERY MACHINES

LOT	QUANTITY	
14229	10	Rebuilt 51 Ga. 30 sec. including round heel, but not automatic welt
14230	8	Rebuilt 51 Ga. 24 sec. Theodore Leibernects, all usual Att. including round heels, but not automatic welt.

SPECIAL "MEN'S HOSE PLANT"

LOT	QUANTITY	
14171	51	3½" 220 N S&W HH 48 Ga. with Stripers, old and new style.
	30	3½" 220 N S&W HH 25 Step Spirals 54 Ga.
	18	20 & 22 PT Sotco Loopers Complete Dye House equipment to finish 5000 dozen per week is included with above machines which are in good condition offered subject to prior.

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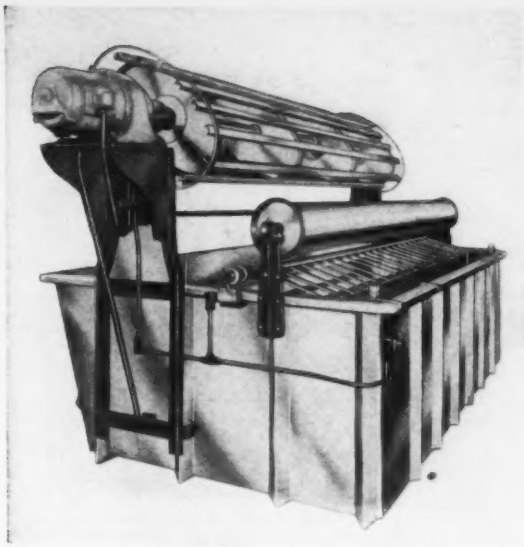
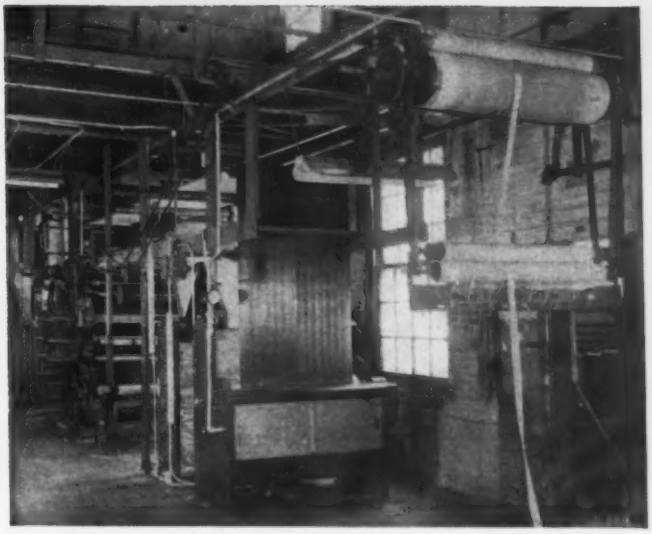


Stainless Steel Dye Becks 2' to 20' length from front to back 86" and 40" deep. Complete with geared head motors, pony reels, flanges, rake stainless steel color board etc.



Blanket Washer and Dryer for print machine use without back greiges.

AGAR, Wood, Acid
AGER, Stainless Steel Acid
AGER, Tower, New
BEAMER, 60" Van Vlaanderen
BEAMER, 60" with steaming drum
BLOWER, New, Squirrel cage type
BLOWERS, R.C. 8x5 3/5" 350 Cu. Ft. per min.
BUTTON BREAKER, VV 50"
BELT, leather 3 ply 28"x½"x70" long
CALENDER, 4 roll 50" Hydraulic
CALENDER, 3 roll 70" face
DECATER, Gessner, full 72"
DECATER, Semi, Van Vlaanderen
DRY CANS, set of 16, 72"x23" dia. horizontal
DRY CANS, set of 19, 50"x23" dia. vertical
DRYER, P & S Airlay
DRYER, 4 Fan P & S Loop, 85"
DRYER, Pin, Kenyon 5 tier
DRYER, Single & Double Truck
DYE BECKS, Stainless steel 4' to 20' NEW
DYE TUBS, 6' Wood complete motorized
DYE TUBS, copper, 25', 22', 20' 6' long
DYEING MACHINES, Smith Drum Paddle type
DYEING MACHINES, Smith Drum Pocket type
DYEING MACHINE, Smith Drum 60 Arm
DYEING MACHINE, Rochester Rotary 30"x20". 3 pocket 20 lb. capacity
EMBOSSER, 54" K. & G.
EXTRACTORS, Beam 50" & 60" BB
EXTRACTORS Open top Tolhurst 40"
EXTRACTOR, K & G, 48", rubber lined basket
FANS, Exhaust 3 blade propellor 30", 36", 48"
FLAT FOLDERS, Elliott & Hall adjustable
FLAT FOLDER, 40" complete adj.
HOISTS, Budgit 1 ton capacity
INFRA RED units complete with blowers
INSPECTION TABLES, 47"
JIGGS, monel lined 60", 50" stainless steel
KETTLE, jacketed, tilting 70 gal. cap.
MOTORS, ¾ to 5 HP AC/DC220 volt
PAD, 3 roll Hydraulic
PAD, 2 roll 50"
PALMER 62"
PRINT MACHINE, 10" sample or ribbon
PRINT MACHINE, 6 color 60"
PUMP, Worthington Vacuum, 18x9 complete with 25 HP motor
QUETCH, 2 roll BB 50" & 60" ball bearings
SCUTCHER, NEW
SHEAR, Hermas, 4 knife 70" wide
SHELLS, Wooden 40"-42"-44"-48"
STEAMER, 60" long 54" dia. Cottage
TENTER FRAME, Pin W & J 30'x220 wide
TENTER FRAME, Morrison 30'x60"
TUBERS, Patereson variable speed motors
TUBER, VV with doubling attachment
WARP COMPRESSOR CREEL
WASHER, open 4 compartment 60" wide
WASHERS, Slop, New Stainless steel
WASHER, GL Rope type steel & wood
WOOL WASHERS, J. Hunter 6'

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TENTER FRAMES

1—#S-104 Van Vlaandern 40' x 60" straight away, ball bearing, worm gear drive Tenter Frame, top opening clips, stainless steel inserts with swivel stand, front drying cy. and take-up attached; 1 — #2 Reeves Drive, 5 H.P. motor; infra-ray drying system attached, 2 burners.

1—#BX-13 25' x 60" Van Vlaandern Straight Away Tenter Frame with worm gear drive, tail top opening clips, stainless steel inserts, swivel stand, and front take-up, no heating arrangement, driven by 1—#1 Reeves Drive and 5 H.P. motor.

1—#L-35 90' x 72" Winsor Jerold straight away Tenter Frame complete with #3 Reeves Drive. 1—15 H.P. 3 phase 220 volts motor, with or without housing, and #00 stainless steel plate clips.

1—#L-15 30' x 50" wide Winsor Jerold swing type Tenter Frame with #00 stainless steel plate clips. #1 Reeves Drive, 5 H.P. 3 ph. 220 V. Mtr., 2 unit heaters, without housing.

CALENDARS

1—#BX-121 3-roll 48" Calendar, bottom and top roll 16" dia. 48" face, center roll 8" dia. 50" face steam heated, lever pressure driven by 1—5 H.P. 3 phase 220 volts motor.

1—#A-25 Butterworth 3-roll Rubber Calendar, bottom and top rubber, covered rolls 18" dia. x 80" face, center roll heated steel roll 12" dia. x 80" face, top screw pressure, let-off, take-up M. D. 15 H.P. motor.

1—#M-25 Butterworth Hydraulic 2-roll Calendar, bottom roll 22" dia. x 45" face husk paper, top roll chilled heated steel roll 14" dia. x 45" face, accumulator, pump, silent chain drive from 5 H.P. motor, 50 ton press, let-off, take up, complete.

1—#B-2000 Ferris Hydraulic 2-roll Calendar, bottom roll wall paper 16" dia. x 50" face, top roll chilled steel heated roll 14" dia. x 50" face, accumulator, pump, motor driven by 15 H.P. motor, 20 ton pressure.

1—#P-1250 3-roll Calendar, bottom and top roll wool paper 16" dia. x 48" face, center roll chilled heated roll 10" dia. x 50" face, V-belt driven by 7½ H.P. motor.

1—#B-20001 Johnson Van Vlaandern 3-roll 50" Calendar, top and bottom rolls wool paper 16" dia. x 50" face, center roll heated chilled steel roll, V-belt drive by 7½ H.P. motor, lever pressure.

1—#G-2500 60" Van Vlaandern 2-roll Embossing Calendar, lever pressure, motor driven.

1—#S-5000 4-bowl Birmingham Rubber Calendar 23" dia. 60" face, all steel chilled heated rolls, driven by herring bone gears.

1—#JA-9000 Perkins hundred ton hydraulic 3-roll Calendar, bottom and top paper rolls, center chilled heated steel roll, driven by silent chain 50 H.P. motor, accumulator and 1—5 H.P. motor driven pump.

PADDERS

1—#BX-107 50" 3-roll Van Vlaandern Print Padder, variable speed friction plate drive, fully complete with let-off, take-up, each roller spur gear driven.

DYE JIGGS

1—#BX-109 52" Stainless Steel Lined Dye Jigg with tiltng expander, fully complete, individually driven with 1—1 H.P. motor attached.

1—#BX-110 42" Stainless Steel Lined Dye Jigg, fully complete with individual drive and 1—1 H.P. motor attached.

8—#BX-850 60" Van Vlaandern Stainless Steel Jiggs with stainless steel rolls, stainless steel tilting expanders, individual motor drive with reduction box.

DRYERS

1—#S-111 National Revolving Stick Dryer, double line, 6 booster motor driven fans on both sides and 1—#1 Reeves, 1—3 H.P. motor, size 11' 6" high, 9' 6" wide, 30 ft. long. Now set-up and operating.

2—#J-112 & 113 Proctor & Schwartz Loop Dryers, stationary sticks, fans on side driven by Reeves and motor. Size is 8' 6" inside, 40' long and 10' 6" high. Now set-up and operating.

QUETCHES

1—#BX-120 Watson 2-roll Quetch 60" 2 rubber covered rolls 10" dia. 60" face, variable speed Reeves pulley drive, 1—2 H.P.. motor, take-up, and let-off.

1—#J-114 50" Van Vlaandern 3-roll Quetch, bottom roll 6" dia. 50" face, top (2) rollers 6" dia. 50" face, friction plate drive with 1—2 H.P. motor attached, fully complete.

PRINTING MACHINES

1—McDonald 5-color 76" wide, fully complete, heavy frames.

1—10 - color Rice - Barton - Fales, 44", heavy frame.

1—6-color Rice-Barton-Fales, fully complete.

1—#C-1000 Rice-Barton-Fales 60" 2-color Print Machine complete with back rigging, motor and Reeves drive.

1—#CO-1850 General Machine Co. Single Color Print Machine with extra drag roll, 54" wide, fully complete with vari-speed unit, mandrels and gears.

WASHERS

1—#BX-106 Open width 60" all steel, 3 compartment Washer, 3 pairs rubber covered nip rolls over each compartment, 10 brass rollers in each compartment, driven by open type bevel gears on side, size of box 35" high 65" wide and 16' long.

MIXING KETTLES

1—#S-108 150 gallon round, all steel Mixing Kettle with agitator and drive.

4—#E-2000 Jacketed Copper Kettles 45 gallons each, single agitator gear driven on one unit by motor 3 phase, 220 volts.

FOLDERS

1—#M-350 Elliot-Hall Flat Folder, complete, 1¼ yard folds, motor driven.

2—#S-250 & 250 A 50" Sipp Eastwood Silk Flop Folding Machines M. D.

DOUBLERS

1—#BX-116 Windle 66" Doubler complete with 1—1 H.P. motor

1—#BX-117 Windle 50" Doubler complete with 1—1 H.P. motor.

2—#M-200 Park Woolson 60" Doubler & Reeling Machines. M. D. comp.

PALMERS

1—#E-101 Butterworth Palmer 80" with 1—10 ft. section pin frame up and down type—complete.

1—#E-100 Van Vlaandern Palmer Quetch Unit 60".

1—#T-6500 Butterworth 80" Palmer, Quetch Unit 60" dia. steel drum with 2-roll Quetch attached, Reeves drive #2, 10 H.P. motor, complete.

1—#EBX-124 Van Vlaandern 60" Palmer, 1—25 ft. Tenter Frame and 1—2-roll Quetch—complete unit.

SQUEEZE ROLLERS

2 Pairs #BX-118 Rubber covered Squeeze Rollers with brackets and lever pressure arms.

6—#CS-119 Rubber covered squeeze rolls 12" to 14" dia., 66" and 72" face, 3" dia. shafts by 12" long.

BEAMERS

2—#BX-126 Beamers, ball bearing throughout and 1—tension arrangement, 3 bars, motor driven by V-belts, 2 brass rolls, 1—1½ H.P. motor, 3 phase, 200 volts.

KNIT GOODS STEAMING CALENDARS

1—#BX-125 Double Width Knit Goods Steaming Calendars, stainless steel heated rolls, stainless steel pan, take-up spreader bar, variable speed drive with 1—1 H.P. motor.

DRY CANS

1—set #BX-129 consisting of 15 Stainless Steel Dry Cans, 23" dia., 72" face, complete welded, ball bearing throughout, gears, drive shafts, driven by 1—#1 Reeves Drive and 1—5 H.P. motor, Johnson Joints, and siphon pipes.

EMBOSSING CALENDARS

1—50" Van Vlaandern #2 Pattern, top steel engraved roll, bottom paper roll, motor driven, lever pressure.

1—Cavagnaro 2-roll Embossing Calendar, top engraved roll, bottom paper roll.

STAINLESS STEEL DYE BOXES

Sizes from 2 ft. standard to 14 ft. complete, motor driven, made to specifications.

TUBERS

3—#JA-500 Van Vlaandern Straight Tubers, motor driven, high speed.

3—#JA-450A M. D. Examining and tubing Machines with tilting table.

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1—56" 2 Roll Rubber Embossing Calender

1—50" 2 Roll Pad — Rubber rolls — Screw & Lever

2—44" 2 roll Schreiners—SCREW PRESSURE

4—Batchers 50/54"—double & single rolls

1—50" 5 Roll Calender—Screw & Lever

1—36" Hydr. Calender—Hand Pump

1—3 Color Paper Printing Machine

1—54" Friction Calender with 3 chilled iron rolls, 1 cotton roll

1—54" Baby Palmer & Blanket

1—50" 2 Roll Morrison Quetch

1—60" 4 Box Woolen Washer with 1-30" 5 Box Washer

1—Rayor & Lincoln Rotary Sewing Machine

1—Watson & Stillman 3 Cyl. Hydraulic Pump

3—Watson & Stillman Hydraulic Hand Pumps

Rubber Rolls from 30" to 70" wide

Brass Rolls from 30" to 70" wide

Sturtevant Blowers from #5 to #8

3—50" Dye Jigs with rubber beams and finger clutches

1—40 hp slipring Motor 220-3-60

2—100 hp Motors 400 V. 2 ph.

1—75 hp Motor 400 V. 2 ph.

1—100 hp Generator G.E. 220-3-60 ac

1—50" horizontal Vat Pad

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100—Draper Model E 40" Looms, 45½ reed space, Roper let-off, high roll worm take-up, midget feelers, roll tops with 2 harness cams, 3 bank mechanical stop motions or can furnish 2 bank electric stop motions, INDIVIDUAL MOTOR DRIVEN, 220 VOLTS.

130—Draper Model E 40" Looms, 45½" reed space, Roper let-off, Ratchet take-up, 2 bank mechanical stop motions, midget feelers, Stafford thread cutters, rubber covered take-up roll with press roll for rayon.

125—Draper Model E 40" Looms, 45½" reed space, Roper let-off, Nutting worm take-up, 3 bank mechanical stop motions, midget feelers, roll top with 2 harness cams, belt driven or will equip with individual motor drives.

365—Draper Model E 40" Looms, 45½" reed space, Roper let-off, Ratchet take-up, roll top with 2 harness cams, 2 bank electric stop motions, belt driven.

240—Draper Model E 40" Looms, 47½" reed space, double filling fork, Roper let-off, Ratchet take-up, roll top with 2 harness cams, 2 bank mechanical stop motion, belt driven.

100—Draper Model E 36" Looms, 41½" reed space, Roper let-off, worm take-up, roll top with 2 harness cams, 3 bank mechanical stop motions, belt driven or will equip with individual motor drives.

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4 **UNIVERSAL CONE WINDERS.** Model #30—Motorized. 8 spindles each machine. 6" cams. Good condition.

2 **FOSTER MODEL #101 CONE WINDERS.** 100 spindles and twin 2 h.p. motors each machine. 6" trav., and slub catchers. Excellent condition.

2 **UNIVERSAL CONE WINDERS.** Model 60 GF. 96 spindles, 6" trav., 3 h.p. motor each machine. Equipped with slub catchers and emulsion troughs. Excellent condition.

SKEIN WINDERS

6 **SIPP DOUBLE DECK SKEIN WINDERS.** 140 oiless bearing fingers each machine, belt driven. Good condition.

3 **EASTWOOD SINGLE DECK SKEIN WINDERS.** 70 spindles each. Wood swifts and spools. Belt driven. Good condition.

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1 **MOTORIZED SCRANTON REELER.** 44"—6 flyers (72 ends). Good condition—extra flyers.

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2 **CALHOUN SKEIN DYE & SOAKING MACHINES,** with special electrical emersion heaters; mercroid timers, pumps fully equipped and motorized. 2 new extra electrical elements. Excellent condition.

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1 **FLETCHER MOTORIZED EXTRACTOR.** 36" basket. Safety cover. Self balancing unit. Excellent condition.

1 **MERTZ YARN CONDITIONER,** with 4 trucks. Good condition.

1,000 NARROW FABRIC MOSSBERG STEEL BEAMS.

70 LOOM BEAMS. 50" between heads. 8" flanges.

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5 **ATWOOD LARGE PACKAGE DOUBLE DECK UP-STROKE TWISTERS.** 192 spindles each machine with new and used replacement parts. Belt driven. Excellent condition. Sturdy, heavy duty machines. Take up shafts available.

1 **LATE DESIGN ATWOOD 5B DOUBLER TWISTER.** Motorized, 80 spindles. 7" trav., double 2" stainless feed rolls. 6" spacing—excellent condition. (Spools available.)

1 **LATE DESIGN ATWOOD 5B DOUBLER TWISTER.** Motorized, 20 spindles, 7" trav., 6" spacing, double 2" stainless feed rolls. Excellent condition. (Spools available.)

4 **ATWOOD 5B DOUBLER TWISTERS.** Rebuilt. 5" spacing—80 spindles each. Double 1" feed rolls—Belt driven—Excellent condition.

1 **MOTORIZED WHITIN TWISTER.** 152 spindles. 4½ gauge; 7" trav; 3" autolubricating rings. Good condition.

1,000 Self stacking bobbin racks. 24 pins. 3½" spacing.

175 SKEIN DRY POLES. Aluminum. 54" x 1½".

250 ADJUSTABLE WIRE SKEIN SWIFTS.

5,000 ATWOOD TWISTER SPINDLES & WELLS.

1,000 ATWOOD TWISTER FINGERS.

1 BEAM HOIST—HAND OPERATED.

10,000 New & Used Vital Replacement parts for Federal Spinners.

SPOOLS - BOBBINS - QUILLS

Quantity	Type	Traverse		Head
27,000	Fibre	4 3/8"	x	3 15/16"
2,500	Fibre warp rolls	9½"	x	6"
31,000	Wood metal bound	6"	x	4"
5,000	5B spinner	6"	x	3 ½"
800	Bakelite 5B spinner	6"	x	3 ½"
8,000	Bakelite shafts	3 ¼"	x	4"
5,400	Bakelite shafts	4 ¼"	x	5"

Quantity	Type	Traverse		Head
5,000	T hole spinner	3 ¾"	x	2 ¾"
35,000	Fibre head	3 ⅜"	x	2 ½"
10,000	Shipping	3 ½"	x	3"
8,000	Metal heads	3 ¾"	x	3"
8,000	Metal heads	4¼"	x	3"
6,000	Metal heads	3 ½"	x	3"

3 RING AUTOMATIC BOBBINS

40,000	7 ⅜"	3 ring
5,500	8 ¾"	3 ring
15,000	8"	Mules

20,000	8 ½"	Woolen worsted 3 ring bobbin
25,000	8"	Woolen worsted 3 ring bobbin

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140 Spindles Each
3—Sipp Double Deck Winders
120 Spindles Each

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Others 4 years old.

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2 German 168" Machines
10 years old.

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New Original Rolls

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FOR HEAVY FABRICS
3—#144 WSV38 1—#144 WSV36

60,000 Lbs. YARN

ORIGINAL CASE
225-2-5 Fiberglass

3 No. 90 UNIVERSAL WINDERS

20 Spindles Each — Individually Motorized—Flat Quill Attachments. Bunch Builders Set Up for Wool and Cotton.

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500,000 Fibre, 2½" Head—3½" Trav.
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25,000 Fibre, 2⅝" Head—4" Trav.
55,000 Metal 3" Head—5" Trav.
25,000 Fibre, SB, 2⅜" Head—4" Trav.
30,000 Fibre, 2⅝" Head—3⅝" Trav.
100,000 Fibre, 2½" Head—3⅜" Trav.
20,000 Fibre, 2¾" Head—3⅜" Trav.
10,000 Fibre, 3⅜" Head—4¾" Trav.
12,000 Fibre, 2¾" Head—3⅞" Trav.
7,000 Fibre, SB, 2¼" Head—4" Trav.
25,000 Fibre, frictionless, 2½" Head, 3½" Trav.
5,000 Bakelite, 2½" Head—5¼" Trav.
10,000 Wood, 3½" Head — 6" Trav.
Manny others too numerous to list.

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INSIDE DIMENSIONS:
23" Deep, 14¾" Wide, 44" Long—2 Snap Hinges — Center Hasp for Lock.

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11-6-O.D. Color - 242 Finish. 19,000 yds., 29½" wide, 5,000 yds., 31" wide.

10 SCHAUM & UHLINGER LOOMS

Narrow Fabric—1900 Model, Indv. Motorized 1½ H.P., Cam Motion 16 Space, Battens, 15'8"

900,000 Yds. ¾" Webbing

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4 Ply Cut Stitched

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1—Van Vlaanderen #8 Mixer, Tank Size 21" x 42" x 20" Deep

1—Drive, #14D16.66 P.D. Generator Sheave #14D58.0 Lineshaft Sheave (Completely Split) 7-7/16" Bore, Standard Keyway, 14—#330D Gates Vulco Ropes

1—New Worthington #3-L-1, Single Stage, Horizontally Split, Double Suction, Ball Bearing Volute Pump, to delivery 300 G.P.M. against a total Dynamic Head of 123 ft., handling 180° F, Water of a specific gravity of .97, operating 2900 RPM at 70% efficiency, requiring 13 HP with flexible coupling, driven by: one type BT Witon Steam Turbine to delivery 15 HP., at 2900 RPM, with 140# Gauge steam pressure, 3% moisture, exhausting against 10# gauge back pressure, Turbine suitable for operation with 225# gauge steam pressure

1—20" American Laundry Basket Extractor Complete with 1.9 HP Motor 1800 RPM

1—50" Five bowl calender complete with three husk rolls and two steel cylinders

1—50" Schreiner Calenders with cotton and wool bowl and steel cylinders

2—40" Schreiner Calenders with cotton and wool bowl and steel cylinders

1—lot consisting 11 various sized Cotton & Wool, Husk and Paper Rolls

2—Schreiner Engraving Machines—John Hope & Sons

1—Schreiner Polishing Machine—John Hope & Sons

1—500# Dumb waiter type elevators

1—John Hope grinding and engraving machine for Schreiner rolls

1—Butterworth hydraulic baling press—42 x 66

1—Copper kier or kettle 48 x 48

1—Granger Foundry (Textile) 3 bowl calender, 44" face, top and bottom cotton bowls, middle bowl chilled iron

1—Textile 7 bowl hydraulic calender, 80" face, brass and cotton bowls

1—Butterworth 7 bowl hydraulic calender, 80" face, chilled iron and cotton bowls

1—Perkins 6 bowl hydraulic calender, 42" face, 2 chilled iron and 4 wool paper bowls

1—Butterworth 6 bowl lever set, 80" face, 3 chilled iron and 3 cotton bowls

1—Butterworth 6 bowl lever set, 80" face, 3 brass and cotton bowls

5—Curtis Marble brushing and shearing machines—42"

3—Centrifugal extractors (Centrifuges) (Sharples)

1—Rodney Hunt 8' oval reel slack washer

1—12" x 24" Power Driven Duplex Pump (Deane)

1—10" x 12" Power Driven Duplex Pump (Deane) No. 41734

6—78" face, thirty-six roll, Woonsocket Napping Machines

1—78" face, Woonsocket Emery Nappers

2—78" face, twenty-two roll, Tarry Nappers

1—General Electric Transformer, Rating 333 k.v.a. Voltage 22000-600, Type H, Form D, Single Phase, Cycles 60.

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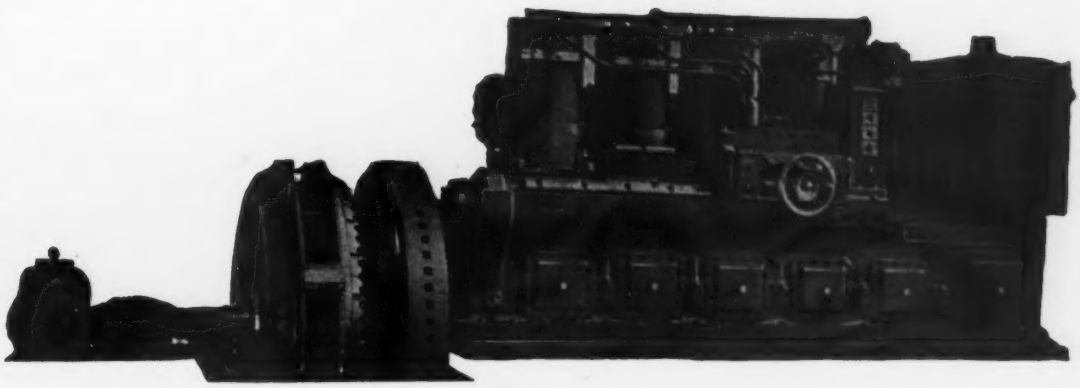

OTHER IMPORTANT OFFERINGS—PROMPT DELIVERY

HP	Model	KVA	RPM	New
2—2000	Fairbanks-Morse 33	1875	300	99%
6—1600	General Motors 16-278A	1200	720	90%
2— 600	Fairbanks 33F	500	400	99%
1— 450	Fairbanks 33E	375	257	95%
1— 375	McIntosh Seymour	375	360	85%
1— 350	General Motors 8-268A	250	1200	85%
1— 150	General Motors 3-268A	125	1200	85%
1— 360	Fairbanks YVA	300	257	80%
2— 240	Fairbanks YVA	200	257	75%
3— 175	Murphy	141	1200	99%

ALSO PORTABLE GASOLINE UNITS

3 — 15 — 30 — 50 — 100 KW

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1—18" Schofield Rag Picker
1—36" Sargeant Burr Picker
1—48" Sargeant Burr Picker
4—20 x 60" J. Smith Garnetts feeds, camel backs, etc.
2—Spencer Automatic Oilers
2—L. & G. Hi-Speed Cop Winders
1—L. & G. 32 sp. Cop Winder from skeins
1—Foster Mod. 12 Tuber from skeins
1—Universal No. 180 Superconer
3—Whitin 304 sp. Quillers, 3½" ga.
2—Altemus 6" Drum Spoolers
1—L. H. Skeining Reel
1—Whitin 180 sp, 2½" ring Woolen Spinning Frame
1—J. H. Horne Rag Washer, New
10—C & K 92", 30 Harness 4 x 4 H W Looms
4—Draper 72", 16 Harness Auto. Looms, Model H
6—Crompton ¾ Chenille Rug Looms
5—Crompton 12/4 Weft Looms
2—Altemus Warpers, Pinless
2—K. W. Skein Dyers, 28 & 56 stick
1—Hunter Single Strand Soaper
1—Windle 72" Folding & Measuring Machine
1—Gessner 18 roll, 80" D.A. Napper
1—Rodney Hunt 12' Slack Washer
2—Smith-Drum Mercerizing Ranges
2—Royal 600 hook Card Cutters
4—L & G Chenille Cutters
2—S.F. Yarn Sizers & Dry Cans
1—P & W 66", Plush Shear
1—P & W Mod. B Double Cloth Shear
1—Voelker 65" Cloth Press
1—Gessner 66" Jumbo Cloth Press
1—E & H Flat Yard Folder, 66"
1—Woonsocket 80", 20 roll D A Napper
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2—Prince-Smith double head, double can Gill Boxes
3—Prince-Smith 30 spindle rabbeth spindle roving frames, 8x4 bobbin, 5" LFR
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1—24 spindle Payne Bottle Winder
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1—Platt 6-head first drawing frame, 15½" bobbin, iron creel, 1½ x 9½" porcupine, 44 rows, 89 pins each
1—Platt 8-head second drawing frame, 15½" bobbins, 1½ x 9½" porcupine, 46 rows, 90 pins each, iron creel
1—Societe Alsacienne 32-head drawing frame, 15½" bobbin, 1½" x 9½" porcupine, 50 rows, 100 pins each, iron creel
1—Platt 34-head reducing frame, 9½" bobbin, iron creel, 1 5/16" x 3⅛" porcupine, 46 rows, 50 pins each
1—Platt 40-head slubbing frame, 9½" bobbin, 1 5/16 x 3⅛" porcupine, 47 rows, 56 pins each, 23 gauge, iron creel
2—Platt 40-head third slubbing frames, 8" bobbin, 1 5/16" x 2½" porcupine, 48 rows, 62 pins each, 25 gauge, iron creel
2—Platt 34-head intermediate frames, 8" bobbins, 1 5/16" x 2½" porcupine, 50 rows, 70 pins each, 27-gauge, iron creel
5—Platt 34-head finishing roving frames, 8" bobbins, 1 5/16" x 2½" porcupine, 50 rows, 70 pins each, 27-gauge, iron creel

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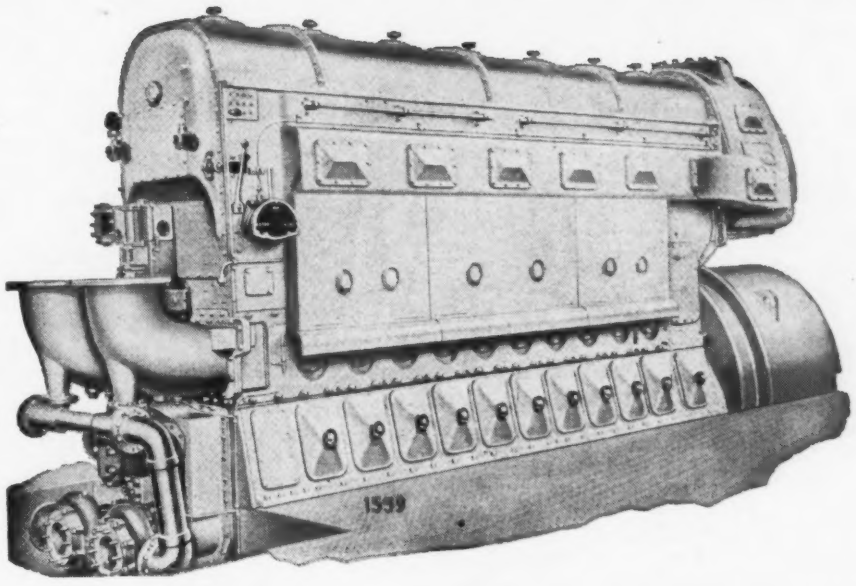

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3—1250 H.P. Fairbanks-Morse Diesel Engines, Model 38D8 ⅛, 10 cylinder, 8⅛" bore, 10" stroke, 600 RPM.

These three units are offered with complete equipment—switchboards, auxiliaries cooling equipment and silencing equipment.

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KVA	MAKE	HP	MODEL	RPM	YEAR
2—1875	Fairbanks Morse	2000	33E16	300	1939
1—1250	Nelseco	1500	6M1-53	300	1931
4—1250	Fairbanks Morse	1700	38D8⅛	720	1944
12—1250	General Motors	1600	16-278-A	720	1944
3—1000	Fairbanks Morse	1250	38D⅛	600	1944
1— 625	Superior	750	OS	327	1938
1— 312	Enterprise	450	D8G-8	450	New
1— 300	Fairbanks Morse	360	YVA	257	1928
1— 250	General Motors	300	8-268-A	900	New
4— 250	General Motors	400	8-268-A	1200	1945
6— 125	General Motors	200	3-268-A	1200	1944
1— 94	Buckeye	112	E	400	1936
4— 75	General Motors	90	6061E	1200	New
13— 62	International	75	UD18	1200	New
8— 37	General Motors	45	3-71	1200	New
15— 18	International	30	UD6	1200	New

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1—P. & S. TWO UNIT RAW STOCK DRYER.

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200 Draper K auto Looms 42" with dobby heads
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8	Combers—Model C.	Whitin—1908/10
1	Comber—Naismith	
1	Slubber—72 spindle, 11x5½", 1¼" front roll (bobbins)	Lowell—1904
4	Fly Frames, 108 spindle, 7x3½", 5¼" gauge, 1⅛" dia. front roll	Lowell—1904
4	Fine Frames, 176 spindle 7x3,, 1⅛" dia. Front roll	Saco-Pettee—1910
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#2 W & S Turret
10" Logans—NEW—all models

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#2K K& T "Milw" Plain—1942
#4 Cinc.—Plain—Dial type—1942
#3V Van Norman—Vertical—PRT—1942
#1 Kempsmith Plain—CD
#4B Becker Vertical—CD
#2A Garvin Universal—CD
24" Cinc. Duplex
#2M Cinc.—Horizontal—all geared—MD

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Folder 14-ga.—Apron
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Gear Cutter—Pfauter #0-14" Univ.
Metal Saw—#4C Cochran-Bly
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1—Vertical cloth brusher serial No. BR-1784.
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1—750' Gal. Lea Courtney Fire-pump.
12,000—Long blade roller bearing spindles complete.
18—Deliveries H & B Drawing, Leather top rolls, 10" Coilers. Ready for immediate delivery.
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1—3 card set 60" Smith cards
1—48 x 48 Breaker card
2—Card Cylinders 60" dia. x 48" wide. Wood lagged.
2—J & B 300 sp. Mules 2¼" gauge, 1936
1—8/4 C & M Singie Picker with feed
20—C & K 92" looms, 4 x 4 box. Motor driven
6—C & K 82" looms, 4 x 1 box, automatic
1—Singer 4 Needle Head Blanket binder sewing machine with Merrow Whip Binder. Complete with table.

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Repeaters, Lacers Card Cutters Jacquards of all description, also Plush Jacquards, Beamers

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Six Furbush woolen cards 48 x 48 wood cylinder three cylinder card with ball bearing 30" card breast, and 16" metallic breast and Harwood feed.

Two Fearnaugh pickers.

Two dusters John Pettie make one a two cylinder machine and one a single cylinder machine.

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1 P & W 4 Cylinder Shear

60" Wide with Turning Device for Shearing Back & Front

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8 Worsted Hall & Stelle 160 Spindle Flyer Spinning Frames

6 x 2" Flyers—3½" Pitch Tape Drive—Equipped with V Belt for Motor Drive but without Motor

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2 Whitin Quilling Machines

304 Spindle—3½" Gauge 10½" Traverse—Model "J"

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Large Heavy Type 3 Roll Machine—But No Embossing Rolls Included—Take 60" Goods

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Can Dryer

29 Tinned Steel Cans 144" Face x 24" Dia. Butterworth—3 Section Vertical

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2½" Ring—192 Spindle

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Boil Out Machines

Includes Pumps & Foxboro Temp. Clock—Also Roll Up Machine—72"

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72"

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85½" High—108" Long—7" Spindle—Centers for 220 Ends—3¼" Spindle—Centers for 440 Ends—Takes Paper Tubes

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All Belt Drive from 5 H.P. Motor—66" wide

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1 Single Drum Jack Spooler—48 End

Or Compressor made by Worcester Warp Compressing Machine Co.—48" wide with Jack Spool Stand —5 digit Veeder Root yardage counter

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McBride—300 Engs—Suitable for 4" x 8" Roving Bobbins—Equipped with Brake & Elec. Drop Motion

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Gessner Steam Press

Jumbo Type 66" Wide
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1—Hunter 30" x 6"—4 Cylinder Garnett machine with 4" workers, ball bearing, automatic feed.

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1—Proctor and Schwartz—20" x 60"—Single cylinder Garnett, Clothed, 12 threads per inch.

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1—Bakset, Monel Metal, Size 120" x 58" x 30" for Hussong Raw Stock Dyeing Machine.

2—Modern Rag Dry Carbonizing Machines complete with hydrochloric acid gas generating plant for each machine, scientifically engineered for quality and high production.

Complete specifications available upon request.

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1—Davis & Furber 60 x 60 metal breaker cylinder, new 1919, complete with worker, stripper, fancy and doffer. Also one extra metal doffer 24" x 60".

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1—Davis & Furber, Model 44, compression spooler, electric stop motion and bobbin stands. Complete with motor and drive.

2—C & K 92" looms, 25 harness, R. H. drive, left hand head motion, worm take-up with motors. Equipped with Veeter-Root pick counter.

1—Windle 66" full width measuring and winding machine, equipped with motor drive complete, new 1934.

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AVAILABLE IMMEDIATELY

20 Roll 90"
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Completely Overhauled
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68" Crompton and Knowles Looms. S-1 Super Silk, 68" between swords. Intermediate Heads 20 harness 2 x 1 right hand. Frame 25 harness silk loomsides. Quantity. Excellent condition.

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Swiss textile export and Transit firm offers to importers, wholesale dealers and clothing manufacturers

Worsted fabrics in pure wool

Fil à fil and Worsted Serge

Immediate delivery or on short term at favorable conditions, lots not beyond 5500 yards. Free Swiss frontier. Payment by letter of credit, eventually by 3 months' acceptance in Swiss francs or free devices.

Also other articles can be delivered, such as Gabardine, Velvet, Tweed, etc. Inquiries with samples will be considered too. Cable or write orders by air mail to

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1—Parks & Woolson Cutting Machine

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3 in one
DUSTER, MIXER AND BLENDING MACHINE
Suitable for Wool, Cotton, Rayon

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TEN—90" GERMAN
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24 and 18 Gauge

TWO—4 YARD
WARP MILLS

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DOUBLERS
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All wool. Solid shades or Moresque. 2, 3, or 4 ply. Tubes or cones. Big production, good deliveries.

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100 Brink Meters for Universal #50 winders

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COMPLETE BRAIDING PLANT

Textile Braiders of all sizes, round and flat, 7 to 65 carriers. Also numerous Novelty Stripers, Doublers and Winders.

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4 Sets 44" w. x 48" dia. x 3 Cyl. (wood)
1 Lot 72" wide Iron Card Rolls
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1 D&F 7' All Iron Hercules Cone Duster
1 C&M 30" Parkhurst Type Burr Picker
1 D&F 48x48 Iron Fearnaught Picker Cyl. Only
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3 T&W Sgl. Head Dble. Baller (Fine)
1 SACM Dble. Head (open type) Baller— with Revolving Creel (like new)
1 T&W Dble. Head, Can Delivery — Backwasher Gill Box ½" p. Ex.

NAPPERS

1 D&F 80"x14" Roll S.A. (French Type)
1 D&F 72"x20" S.A. or D.A. year 1925

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3 S-L with 7'&5' Cyls. — Wide Headway, Size Box

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1 Gessner 72" Full Decater. Excellent
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1 Birch 66" Dble. Beater — Ceiling Type Scutcher
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1 P&W Mdl. A x 66½" Dble. Shear.
1 P&W 42½" Mdl. A Dble. Shear.

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2 D&F 420 spdl. x 2 1/16" ga.
1 J&B 330 spdl. x 2¼" ga. — Rebuilt for 11" paper tubes. Excellent.

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2 Lindsay—Hyde 50 spdl. x 54-72" skeins

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1 Collins 160 spdl. x 3½" p. x 2¼" — Ring Fancy Twister
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3 LMS 200 x 3¾" p. x 5' — Dolly Roll Wstd. Cap Twister

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18 S-P 228 spdl. x 3½" ga. Band Drive. Ex.
16 Deliveries LMS 12x36 Drwg.

MISCELLANEOUS

2 WCM Co. 200 end All Iron Cheese Creels
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142 Fibre Roving Cans 6" dia. x 32½" Seamless
506 Fibre Roving Cans 7" x 32½" Seamless
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200M Once Used Foster Nu-Taper — Paper Cones

ELECTRIC MOTORS

All Types and Sizes,
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1 Foster Mdl. 30x100 spdl. Cone Winder. Motor Driven.
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Interested in purchasing Weaving Mill with modern machinery and an assured supply of Rayon Yarn (75-, 100-, 150- Denier), including necessary processing equipment. Please send details to:

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By large financially powerful diversified organization wishing to add another enterprise to present holdings.

Existing Personnel Normally Retained

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Units of 4, 8 or 12 — 84" C & K 4x1 Automatic Looms. Heavy woolen or worsted type with electric stop motion. Principals only. Answers will be kept confidential.

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5,000 to 10,000 square feet

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Chemicals, Dyes, Gums, Oils, Waxes, Greases, Pigments, Residues, By-Products, Wastes

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to manufacture 50" Hi-Grade skein dye fabrics on commission. Box Loom and Jacquard work. Will assist in converting from Piece dye fabrics. An opportunity for a well organized plant.

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Commission weaving wanted on gros grain ribbon from five to sixteen lignes in width; and tapes up to two inch width.

VASCO NARROW FABRIC

334 East Avenue **Pawtucket, R. I.**

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Wanted Immediately

12 dozens Plain Flat Machines on Stand 10gg 32 inch bed
4 dozens Rashell Machines 24gg 96 inch width

Airmail catalogue, samples. Holding license.

Terms L/C. C/A.

Arthur Importers Ludhiana

ARTHUR & COMPANY

Importers, Exporters

LUDHIANA, INDIA

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State size, condition, make and price.

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Commission Weaving & Winding Wanted

Commission winding wanted from spools and tubes to cones.
Commission weaving wanted for dobby or plain weave.

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Morris Malinow, Owner

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S&W, BANNER or STANDARD 3 or 3½ inch, 160 to 200 needle knitters for men's half hose. State model, condition & price. Will consider purchase of small mill now operating or idle with above type knitters. Write

B. T. MORGAN & ASSOCIATES

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Warping and Winding of Silks and Rayons.

EUREKA WARPING & WINDING CO.

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For 15 ft. 8 in. Ribbon looms. About 70 spaces per batten.

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ONE 6-SPINDLE DRAWING BOX

12½ PITCH — 14 x 9 BOBBINS

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Have steady supply of top available for commission spinning of 2/20's worsted yarn in 58's quality.

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WORSTED SPINNING EQUIPMENT

(Bradford oil spinning type)

Modern machinery with a capacity of approximately 4000 lbs. 2/32s 64s for 40 hour week. Soonest delivery important. Cash Deal. Reply with fullest details to

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Will buy your surplus and obsolete dyes and chemicals for cash.

NEW ENGLAND PRODUCTS CO.

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1 continuous Open Washer with Nip Rolls and 1 Model 60 D Butt Seamer.

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UNIVERSAL WINDERS

One spindle machines capable of making 12" x 12" tube.

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Wanted to purchase surplus yarns of all types — cotton, rayon, acetate, nylon, silk, wool, spuns, and blends.

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Double Roll Novelty Twisters 3½" or 4" Pitch, 2½" to 3" Ring. State Age, Condition, Number of Spindles and price including bobbins.

W-101, Textile World
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WANTED

BRAIDERS

for covering rubber tubing, 1 or 2 deckers 24, 36, or 48 carriers.

W-110, Textile World,
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YARNS WANTED

FOR CASH

All types—Cotton, Rayon, Acetate Natural, Tinted or Dyed.

Address:

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SALESMAN

with 12 years textile mill experience would like to represent reliable firm. Willing to travel, owns car, good appearance.

SA-104, Textile World
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SALES REPRESENTATION

"Young man familiar with textile processes and managing personnel of manufacturing and finishing plants in the Carolinas wants sales representation contract with reliable machinery or supply manufacturer. Ability can be shown by past sales records in this field—Confidential."

SA-993, Textile World
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Holland. Singel 127, Amsterdam

Excellent trade connection, seek sole representation from leading manufacturer of textiles of every description, woolen, cotton and rayon piece goods, furnishing materials and Carpets.

Bankers:
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INCREASED SALES 30%

A record you would be interested in seeing.
SALES—OR DISTRICT—MANAGER (39).
Increased sales 30% last year over previous year. Dealing with textile mills, cordage and hat mfrs. and mfrs. of textile, cordage and other machinery. Industrial engineering background; catalogue, price list, budget control, warehouse and advtg. experience. Developed new products. College—Pleasing personality—Married.
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Selling Agents
Woolens

Can obtain business now

We have personal contacts among cloak and suit manufacturers, childrens wear also boys and mens wear.

If given an interview we can furnish the highest references.

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330 West 42nd St., New York 18, N. Y.

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First class sales organization

Esp. interested in yarns and yard goods and covering all Sweden—will represent you *direct* (if you are or soon will be a strong manufacturer), will increase and organize your sales, will merit your excl. rights. Will you contact us now with offer and samples?

MESSRS. N. SODERSTROM
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Please write to:
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SELLING OPPORTUNITIES OFFERED

(Continued from page 288)

WANTED SALESMAN—Calling on Carpet Industries to carry side line of Cotton Bands. Write Corde Twisting Machine Co., 97 Cortlandt St., No. Tarrytown, N. Y.

SALES REPRESENTATIVES Wanted: Manufacturer of complete line of chemical specialties offers good opportunity for experience salesmen. Territories open—New England, Pennsylvania, Metropolitan New York and the Carolinas. Give complete information—include age, selling experience, education, etc. SW-116, Textile World, 330 W. 42nd St., New York 18, N. Y.

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PROFESSIONAL SERVICES

(See page 318)

SALES ORGANIZATION

with capital

desires mills producing Drapery and Upholstery fabrics. — Nationwide distribution. Highest credentials.

Box 518, REAL SERVICE
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WANTED

Man with broad experience in both selling and technical "trouble shooting" to call on textile mills, also on paper industry, as representative of highly regarded, old established chemical firm. State full details.

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WANTED

CHIEF CHEMIST

for large tricot underwear plant in South. Must be capable of directing control laboratory and supervising the dyeing and finishing of acetate, nylon, and viscose fabrics. Address in confidence

CHARLES P. RAYMOND SERVICE, Inc.
294 Washington Street Boston, Mass.

Over 45 years employment service for textile mills.

An Opportunity
in NORTHERN INDIA

WANTED a Technical or a Technical-cum-General Manager for one of the biggest Cotton Mills in Northern India. Wide experience of the working of cotton spinning, weaving and finishing in India and/or foreign countries essential. Salary no object for a really qualified and experienced person. Free furnished house in addition to remuneration. Apply with copies of testimonials and experience.

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WET FINISHING FOREMAN

Thoroughly experienced on carbonizing, scouring and fulling. Must be capable of assuming full responsibility for very active department. Replies held in strict confidence. Must give complete details, all past employment and experience. Assured future for right man.

P-109, Textile World
330 West 42nd St. New York 18, N. Y.

WANTED

PRACTICAL DYER-FINISHER

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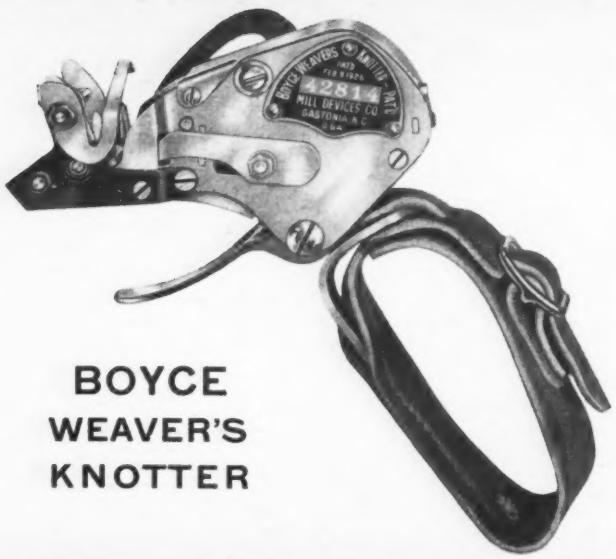

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Mount Hope CONTINUOUS ROLL FEED

Eliminates Costly Stops in Dyeing, Printing, Finishing

SLACK in the scray box of the Mount Hope Continuous Roll Feed permits full speed operation of your dyeing, printing or finishing machines while supply rolls are being changed. And one person can quickly, easily sew on a new roll. Here is a valuable saving in time and labor, two precious commodities in any mill. A third saving effected is the virtual elimination of cloth damage due to machine stoppage when supply feed is interrupted.

The Mount Hope Continuous Roll Feed consists of a cradle, with ball bearing rolls, in which the new roll is held in place by adjustable selvage locators, motor driven ball bearing nip rolls and a scray. A center bar let-off with brake may be substituted for the cradle, if desired.

The use of the Roll Feed varies with the manner of using the scray as in the three methods listed below:

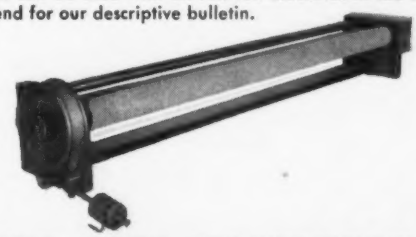
1. Scray normally empty (except when sewing on new roll) with cloth being pulled from roll over two ball bearing idler rolls. Just before new roll must be sewed on, operator starts simple constant speed motor putting nip rolls in contact thus filling scray.

2. Scray normally full to level controlled by electric eye. Simple constant speed motor starts and stops automatically to maintain this level.

3. Scray normally full. Level maintained by synchronizing nip roll speed with speed of machine being fed, by variable speed drive from direct current motor, or from mechanical speed changer and constant speed motor.

The Open Width Tension Device, illustrated below, should be used with the Mount Hope Continuous Roll Feed when the cloth is guided to a succeeding machine.

Use the Mount Hope Continuous Roll Feed for continuous production. It can be used with all roll fed machines in the finishing plant. Send for our descriptive bulletin.



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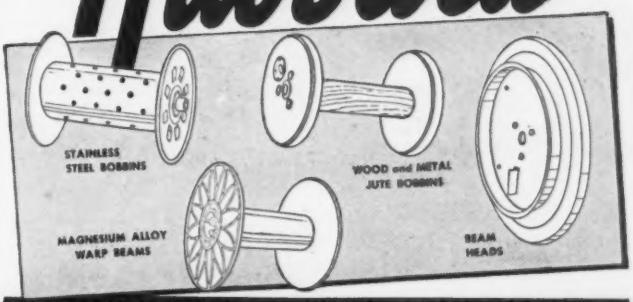

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PREVENT THREAD BREAKAGE

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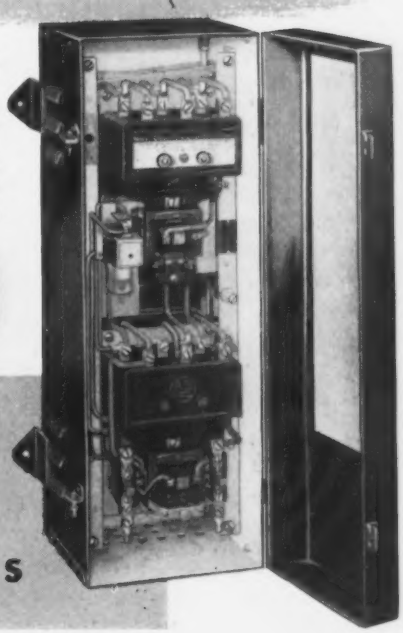

Bulletin 740 Automatic Resistance Type Starters provide velvet-smooth motor starting for squirrel-cage motors. Also available in the Bulletin 640 Manual Starter.

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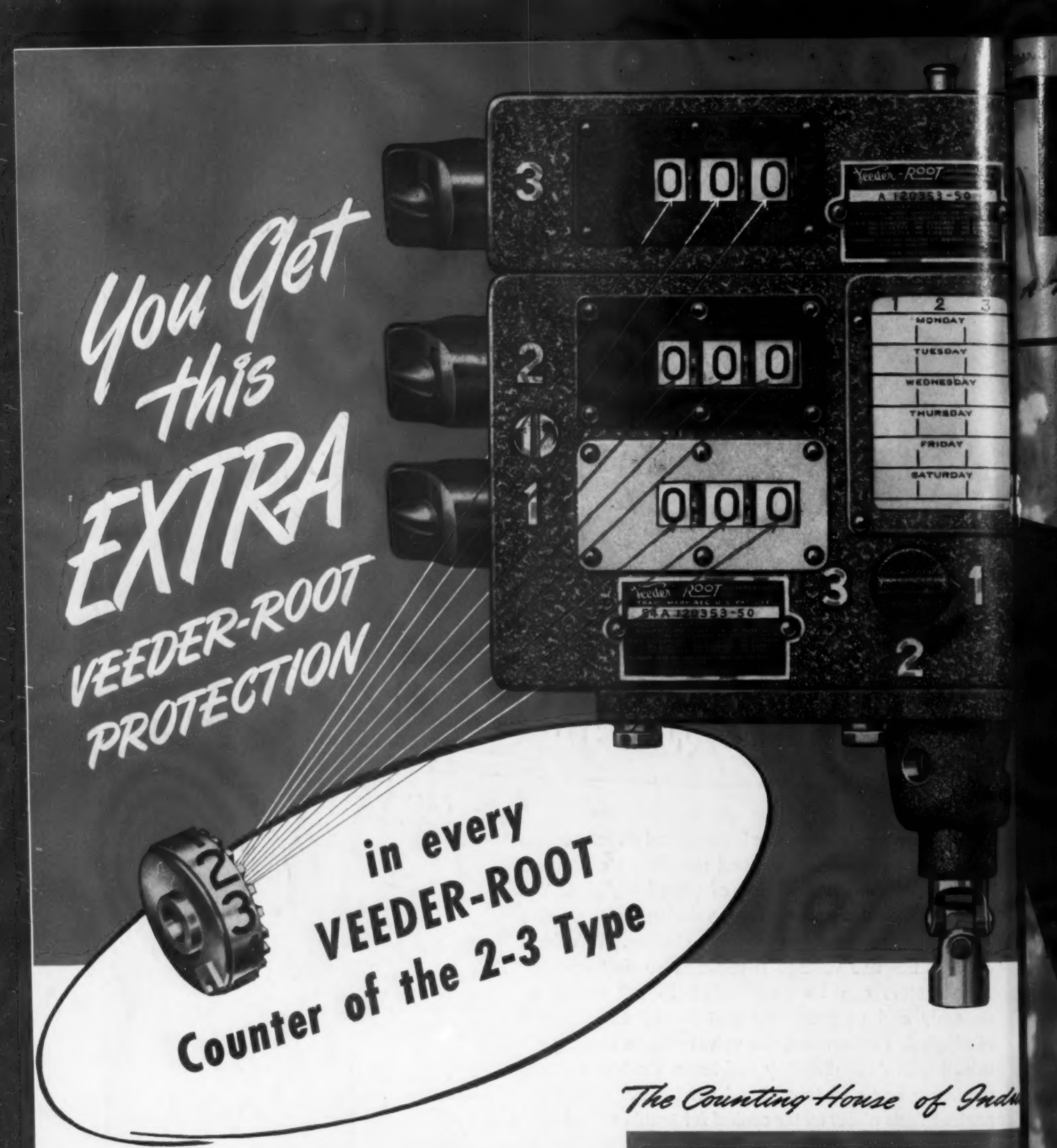
MOTOR CONTROLS FOR TEXTILE MILLS



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